EL
THE
BLOODLINES
Sai サイ Anarchy

PROJECT BLUE BEAM of NASA.mp4
https://drive.google.com/file/d/1i54_nEMjcxlNWXkNyEamAX9LYownvyVh/view?usp=sharing
Project Blue Beam Alien Technology
https://drive.google.com/file/d/1SLDFJpGHA24Wq73jLkTcL9PHiZM1uOkJ/view?usp=sharing
Oh Anonymous U.S. Ordered Guillotines.mp4
https://drive.google.com/file/d/1amFIAEcOUuUZozI3PX90wnS8swEqlMYn/view?usp=sharing
ANONYMOUS MANIFESTO.mp4
https://drive.google.com/file/d/1aXGj--xHh484Np2xVRaFUTyCPfcdkBjH/view?usp=sharing
Message From Anon DK EL The Bloodlines available now!.mp4

https://drive.google.com/file/d/1U-EomYH11lqt4MZxGzOenAyb-AmvOYg3/view?usp=sharing

by Sai Anarchy

"There is no peace for those who wonder on my path, no escape shall they find. For when I shine my light on them, they will be forever mine."

Part One Chapters:

- Eisen Und Blut
- Pan

Message From Anon~DK Pan~HD

https://drive.google.com/file/d/1E9-GB3hSDHJ9f0ONHC5e8k43FstpY1H3/view?usp=drive_web

- Knights

Message From Anon~DK Knights~HD

https://drive.google.com/file/d/1PBUruWti8okuOvE_f2_Tuv8qdiJ-Opf7/view?usp=drive_web

- Jesuit

Message From Anon~DK Jesuits~HD

https://drive.google.com/file/d/1Sun8KNVq0rtznp_FLQxtXQVF9kM9qisz/view?usp=drive_web

- DuPont

Message From Anon~DK The Duponts~HD

https://drive.google.com/file/d/1gDYqaUIZSmW-Od1Wi7N2GHIT6yrQaucl/view?usp=drive_web

- Astor

Message From Anon~DK The Astors~HD

https://drive.google.com/file/d/1Xvn3ZHCR7o_qqQ1eB5M8AlRNkGicq2d8/view?usp=drive_web

- Collins

Message From Anon~DK The Collins~HD

https://drive.google.com/file/d/1ILkk54bLN0oGfmQsbTWjj7e-5L1Xxgpo/view?usp=drive_web

- The R's

Message From Anon~DK The R’s~HD

https://drive.google.com/file/d/1YRagpWqlemd7nDbMY1jGdPQNSDlA-rpk/view?usp=drive_web

- Vanderbilt
- Bundy

Message From Anon~ DK A Bit of Bundy

https://drive.google.com/file/d/1bLexnNwnHoUWLPmnNemvmGpr8AlpPo2H/view?

- Kennedy

Message From Anon~DK Kennedy~HD

https://drive.google.com/file/d/1c7AMPIJoKAhpp5jiVif9uO3Eo4Hj7nkL/view?

- Onassis & Li

Message From Anon~DK Onassis & Li~HD

https://drive.google.com/file/d/1boFUc83r0MdkeHvTOLlq7TpqcRGWrrkp/view?usp=drive_web

- Van Duyn

Message From Anon~DK Van Duyn~HD

https://drive.google.com/file/d/1jQu_JPN93LQNESqSYMZBQw8_xsh-Fu_A/view?usp=drive_web

- Millennium

Message From Anon~DK Millenium

https://drive.google.com/file/d/1r-bgSFF370K1rThVKARK_tngNprifXHU/view

- Blood

Message From Anon~DK There Will Be Blood

https://drive.google.com/file/d/1iCcqP3Daue13O-UUo9GuurxLSr1fIFii/view?usp=drive_web

Part Two Chapters:

- White Pope

Message From Anon~DK The White Wizard

https://drive.google.com/file/d/1JwKIrZbPGEe4fSYR3tI8lwqC9BHa372M/view?

- Black Pope
- Farnese

Anonymous Families Who Rule The World Farnese Family

https://drive.google.com/file/d/1QkngU2l3lHVZYcD3jSJ3GdMyKKfxBCgJ/view?usp=drive_web

- Orsini

Anonymous Families Who Rule The World Orsini Family

https://drive.google.com/file/d/1ZHa0V-yXWp1rjzk6mZ-61xXMkXhhQcVy/view?usp=drive_web

Anonymous Families Who Rule The World Orsini family

https://drive.google.com/file/d/1_3Oeu1nKpzWnWv2Y-0gZ-7cI3T57Ol_M/view?usp=drive_web

- Aldobrandini

Anonymous Families Who Rule The World Aldobrandini Family

https://drive.google.com/file/d/1a6sLPOkcd56epMeSTlaEntU1gZN-_gbL/view?usp=drive_web

- Somaglia
- Breakspear

Message From Anon~DK Somagilia And Breakespear

https://drive.google.com/file/d/1xZxmZBf14GgvMMQb1lmU46gDjNzELpe2/view?usp=drive_web

1 Message Enter the Dragon~HD

https://drive.google.com/file/d/1of-rxcNA1hzxTSVMJ4d8rqZr8Ixk4Tp8/view

2 Anonymous Families Who Rule The World The Bloodlines Asian Persuasion Anon~DK

https://drive.google.com/file/d/1hQN9edRYk7f5c7R5kdqrqQ2e8dP-bjlk/view

3 Anonymous Families Who Rule The World VATICAN TWO POPES WHITE BlACK POPES.... JESUITS NWO ILLUMINATI BLOODLINES EXPLAINED L33T

https://drive.google.com/file/d/1YVZI5X-xbEi_LFLhCFQh_fWbRf3ShTgV/view?usp=drive_web

4 Message From Anon~DK ~ Rulers of New World Orders Past

https://drive.google.com/file/d/1MVo3COqDJnBRcCPUYzm2b4CQ_A6UWqWw/view

5 Message From Anon~DK In the Beginning~HD

https://drive.google.com/file/d/1WHb4JlAmWHeo94gCrmgt7KuJ9tVzBYhQ/view?usp=drive_web
6 Message From Anon~DK The Road to Rome~HD
https://drive.google.com/file/d/118osTvZksaZlmEBInjkCaU9ythfRpKLY/view?usp=drive_web
7 Message From Anon~DK Out of the Woods~HD
https://drive.google.com/file/d/1kwFy3JKV-TpMa7CU8NE7LJDm1g6zxwx7/view?usp=drive_web
8 ANONYMOUS URGENT 3 CALAMITIES COMING ON THE EARTH
https://drive.google.com/file/d/17Yw0W880fcpvlyWWePVW2cxhZ_cCNzHM/view
9 Message From Anon~DK Bloodmoney~HD
https://drive.google.com/file/d/1G_efoBsAn1vZ882nAC8NuwKhB4foZ0DL/view?usp=drive_web
10 Message From Anon~DK Dying for Truth~HD
https://drive.google.com/file/d/1UeO-aNBV7Q7Tut_jjfhHqEo3tP65XMjk/view?usp=drive_web
11 Message From Anon~DK Infection~HD
https://drive.google.com/file/d/1QTxQEDnQvvPNZEh2ApP9YSd_wFCoxv_A/view?usp=drive_web
12 Message From Anon~DK Behold The King Of The New World Order
https://drive.google.com/file/d/15AKUs6BpsC9DdXZG7EqzzxErSIlYDTDg/view?usp=drive_web
13 Message From Anon~DK Welcome To The New World Order
https://drive.google.com/file/d/1vjUr4uS7Il6fRO6pxVKMZtKmq2C-KiWB/view?usp=drive_web
1 Anonymous If This Doesn't Open Your Eyes Nothing Will!
https://drive.google.com/file/d/1gvMuZ0Q9bwtJ4WFEZiQySuISu-4CRNfM/view
2 Terrifying Anonymous Message RedCode 2017
https://drive.google.com/file/d/15HG29Uqzx26mVjmXENHaxX0buhsOlLu-/view
3 Anonymous - The TRUTH about WW3 I-II
https://drive.google.com/file/d/1lN56nA6gWWQMorbpFPJvoBkt3SrUi5wp/view
4 Anonymous WORLD WAR 3 has begun! - 2017
https://drive.google.com/file/d/1Ad5eLt4lD31zMIchV4yHBU6kO_wNgVJj/view
5 Anonymous Great Deception is Coming... CERN ALERT MESSAGE 2018-2019
https://drive.google.com/file/d/1y5aUvCkIZhD7mwDGbObzzPQcYxKZVz3m/view
6 Message From Anon~DK ~ The Deception Continues
https://drive.google.com/file/d/1qXpISnuzq9xD71u-kD4AMjttnyP7wmzk/view
7 ANONYMOUS URGENT 3 CALAMITIES COMING ON THE EARTH
https://drive.google.com/file/d/17Yw0W880fcpvlyWWePVW2cxhZ_cCNzHM/view
8 Anonymous Great Deception is Coming CERN ALERT MESSAGE 2018-2019
https://drive.google.com/file/d/13Dq5Q-QBaKmAOhsPiz3RerHe5n0JbcaC/view
9 Anonymous Warning to Humanity - Do Not Be Deceived
https://drive.google.com/file/d/1neKCIWAO2mtZgGv2mfsdDsl1rodVjeCR/view
10 Message From Anon~DK ~ Warning to humanity PART 2 DO NOT BE DECEIVED
https://drive.google.com/file/d/1neKCIWAO2mtZgGv2mfsdDsl1rodVjeCR/view
11 Warning to humanity DO NOT BE DECEIVED ~ A Tale of 2 Cities ~ HD

https://drive.google.com/file/d/1AquiBiABk-pa8JHRRqvbD189nNdK3rUw/view
12 Message From Anon~DK ~ DO NOT BE DECEIVED Part 2 Timeline of Events
https://drive.google.com/file/d/1uu_ez4BaXXq65Nwvb9TxKs1zBr7wmjT4/view
13 Message From Anon~DK ~ Warning to humanity PART 2 DO NOT BE DECEIVED
https://drive.google.com/file/d/1g3jgDsy9SVqy06RHGsR08PPCCvbRkYTt/view
14 A Message To Fake Anonymous And The Deceived
https://drive.google.com/file/d/1xEcCxbWWMMHm3fGOZP0n0rReURgxgkZ_/view
15 Anonymous - This will Change How You See Everything... (2018-2019)
https://drive.google.com/file/d/1WUzqcaZblytTUIn8Ftr1OObM0cefwQlk/view
16 Families In Agenda New World Order 2017 J.F.K Warning WW3
https://drive.google.com/file/d/1Ezwjne5GF3BFw-GWKa9JPJ7Rm5EDTIuA/view
17 ANONYMOUS EXPOSED November 5 One DATE In THREE TIME TRAVEL Movies THREE Years Apart
https://drive.google.com/file/d/1PKsOQw8jZrTVuIyG9UGiuCaGuknN9-g4/view
18 Anonymous Exposed
https://drive.google.com/file/d/1PKsOQw8jZrTVuIyG9UGiuCaGuknN9-g4/view
19 Anonymous Exposed
https://drive.google.com/file/d/1u2lRkZsELvUKBCCL4JLAHYZIw4SdlGwQ/view
20 ANONYMOUS IS THE CIA
https://drive.google.com/file/d/1dJ_b8v8aFJ-JL-DQoC4moUHdVb0j8cay/view
21 Anonymous The Truth May Scare You!
https://drive.google.com/file/d/1RrqcEhePbcQVo5ijjhhg-3cXYOf5gWm-/view
22 Anonymous. 5G Grid, Geordie Rose, CERN. Why should we be worried Message from The Collective HQ
https://drive.google.com/file/d/1KeVHjwZV00ZD7FyVDvEKQ1oq8GKYjjIg/view
23 Anonymous. If You Think You Can Handle The Truth, Well Here It Is!
https://drive.google.com/file/d/1esgqLTmvAoelW3N7QFtxakUqSNMjR5YU/view
24 From Anonymous If you think you can handle the truth, well here it is!
https://drive.google.com/file/d/1YeL31I7Tdhvs9qwKyYptu_0OsyvtZQXx/view
25 ANONYMOUS IS BACK!! 2016 UNCOVERING THE NEW WORLD ORDER PLANS
https://drive.google.com/file/d/1aQFvvOuj1Hqu5DdN_vaUd0tzF1Twh225/view
1 Message from Anon~DK Waves of Intelligence-HD
https://drive.google.com/file/d/1MueGMcCRa6GFpuPQMb29jbPtvnhoNSOb/view
2 Message from Anon~DK Waves of Intelligence Part II The Mandela Effect~HD
https://drive.google.com/file/d/16qMZBFlhYaqU5k16vHlLZUaeh6jONRaW/view
3 Message From Anon~Dk Waves of Intelligence part III The Quantum Experience
https://drive.google.com/file/d/1xzd4k8btCaSYQ6vf8ETXE6bldEkq05cB/view
4 Message From Anon~Dk: ~Waves of Intelligence VI: Bio Hacking

https://drive.google.com/file/d/1wuJyj9MjKHp2nkbEwjCaexVsWBUOmXiF/view

1 Anonymous Movie The L33t~HD.mp4

https://drive.google.com/file/d/1Kh2vKEOeX2NH1Yy24llinuMdaZbbR0He/view

2 The REAL Leaders Of The World (Must See Documentary) - HD

https://drive.google.com/file/d/1MmRBal4M0RX3qO9ofOSAvNh-WiO8I4Fd/view?usp=drive_web

3 Message From Anon~DK ~The War on All Fronts

https://drive.google.com/file/d/1Xu7jCUSwvHVXGapzmgXL3PhvnzvqjaUY/view

4 Anonymous The Solution (Official Movie)

https://drive.google.com/file/d/1A784siMtwWYaMsL-ff3xdt-_tQK6lyR4/view

5 Message From Anon DK~The Point Of No Return Mark Of The Beast~Anonymous Construct

https://drive.google.com/file/d/11IVxFfyl5Jyb8FmOrMof0J12x50Vi0b_/view

1 ~ Message From Anon~DK ~ The Randal Turner Ring

https://drive.google.com/file/d/14zcl316U5xS5bU_ka0wG-Fp9OVa1TOq-/view

2 ~ Message From Anon~DK ~ Randal Turner Reagan Assassination MkUltra Survivor

https://drive.google.com/file/d/1pUodnZ1G1r80zJhzdSuVqgqSCefvcLd0/view

3 ~ Message From Anon~DK ~ A Life in MKUltra~HD

https://drive.google.com/file/d/1exGDg_2J6vvFwzGNkfOXVpHbUBPy59SO/view

4 ~ Message From Anon~DK ~ We Must Help Randal Turner

https://drive.google.com/file/d/14i4ZwzJujDe3jIX8SUKfMnEr_4znQx51/view

5 ~ Message From Anon~DK ~ The Truth About Corey Haim~HD

https://drive.google.com/file/d/1AvkBuUqjWZQkhO152imkF1-TBEmNQdIa/view

6 ~ Message From Anon~DK ~ Operation Justice I When Rapists Roam Free in the Home of the Brave

https://drive.google.com/file/d/1cRfBpnOjBY0g-9fTTX3XBBNuz_WQsKwx/view

7 ~ Message From Anon~DK ~ Act of Justice Please Support Randal Turner

https://drive.google.com/file/d/10Vi5dbNhOrHg2Pi2vnaUS4XHWNtsr_3d/view

Anonymous. NEW! The Elites Tools of WAR. Part 1 via The Collective HQ.mp4

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Anonymous. NEW! The Elites Tools of WAR. Part 2 via The Collective HQ.mp4

https://drive.google.com/file/d/1-xAF3XWOX4VZAIlX-tJZ-jU2ScIBVKqH/view?usp=sharing

ANONYMOUS. The Collective Podcast, Audio Re-broadcast.# part 1 TheQllective#2Q19.mp4

https://drive.google.com/file/d/1niIX34kyVmihooihdcvgcBrGRW3hYrSk/view?usp=sharing

ANONYMOUS. The Collective Podcast, Audio Re-broadcast.# part 2 TheQllective #2Q19 (2).mp4

https://drive.google.com/file/d/1VhgqqR6tFiq159bpufplEjqFt-57hdVS/view?usp=sharing

X ANON DEEPSTATE DOX (PART 1).mp3

https://drive.google.com/file/d/1cfs20-FZwJnd0CopzGKMPBHjBK0GDL1g/view?usp=sharing

X ANON DEEPSTATE DOX (PART 1).wmv

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X ANON DEEPSTATE DOX (PART 2).mp3
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X ANON DEEPSTATE DOX (PART 2).wmv
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X ANON DEEPSTATE DOX (PART 3).mp3
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X ANON DEEPSTATE DOX (PART 3).mp4
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X ANON DEEPSTATE DOX (PART 4).mp3
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X ANON DEEPSTATE DOX (PART 5).mp3
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X ANON DEEPSTATE DOX (PART 5).mp4
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X ANON DEEPSTATE DOX (PART 6).mp3
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X ANON DEEPSTATE DOX (PART 6).mp4
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X ANON DEEPSTATE DOX (PART 7).mp3
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X ANON DEEPSTATE DOX (PART 8).mp3
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X ANON DEEPSTATE DOX (PART 8).mp4
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X ANON DEEPSTATE DOX (PART 9).mp3
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X ANON DEEPSTATE DOX (PART 11).mp4
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X ANON DEEPSTATE DOX (PART 12).mp3
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X ANON DEEPSTATE DOX (PART 12).wmv
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X ANON DEEPSTATE DOX (PART 13).mp3
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X ANON DEEPSTATE DOX (PART 13).wmv
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X ANON DEEPSTATE DOX (PART 14).mp3
https://drive.google.com/file/d/1cetLfOHMUVX9lPhDxsugt-9De6AduNJF/view?usp=sharing
X ANON DEEPSTATE DOX (PART 14).wmv
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X ANON DEEPSTATE DOX (PART 15).mp3
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X ANON DEEPSTATE DOX (PART 15).wmv
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X ANON DEEPSTATE DOX (PART 16) FINALE.mp3
https://drive.google.com/file/d/11kYcwFX8q1jUTQlQKz2qywz81LqfAzJG/view?usp=sharing
X ANON DEEPSTATE DOX (PART 16) FINALE.wmv
https://drive.google.com/file/d/1RkIkidhbCfuaKcNtGIX7AHu-Bku0zKYH/view?usp=sharing
X ANON DEEPSTATE DOX (PART 17) Anonymous - 06DD17 The Alphabets, Bribes, Fake-Book and Spin Hell.mp3
https://drive.google.com/file/d/1NBYm-7AsG1OSk4Jise9gm9WJrCPtroPC/view?usp=sharing
Anonymous - Deep State Dox part) 06DD17) The Alphabets, Bribes, Fake-Book and Spin Hell.wmv
https://drive.google.com/file/d/1gRLf0hwCO1DRIlIuXesnriLmvrc6pGjZ/view?usp=sharing
X ANON DEEPSTATE DOX (PART 18) Anonymous Z3R0S3C 06DD18 Club of Rome.mp3
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X ANON DEEPSTATE DOX (PART 18) Anonymous Z3R0S3C 06DD18 Club of Rome.wmv
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X ANON DEEPSTATE DOX (PART 19) Anonymous Z3r0S3c-06DD19 Professional Liars (Part 1).mp3
https://drive.google.com/file/d/13DgiwlRZj0qX2ShZLTGeBovlIiBRW2be/view?usp=sharing
X ANON DEEPSTATE DOX (PART 19) Anonymous Z3r0S3c-06DD19 Professional Liars (Part1).wmv
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X ANON DEEPSTATE DOX (PART 20) Anonymous Z3R006DD19 Professional Liars (Part 2).mp3
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X ANON DEEPSTATE DOX (PART 20) Anonymous Z3R006DD19 Peofessional Liars (Part 2).wmv

https://drive.google.com/file/d/1s7Q_1uIR4RlGfq15EanayNGHKzv0Ooh9/view?usp=sharing
X ANON DEEPSTATE DOX (PART 21) Anonymous Z3R0S3C06DD20 News Corp and Hellish Minions. (MP3)
https://drive.google.com/file/d/10Aqjmt-dZPGc-g6CFiWEau9yHiKnn1Fj/view?usp=sharing
X ANON DEEPSTATE DOX (PART 21) Anonymous Z3R0S3C06DD20 News Corp and Hellish Minions. (HD)
https://drive.google.com/file/d/1AhlAhH7bNWXQwL28k8tIndEZrI88LBCM/view?usp=sharing
X ANON DEEPSTATE DOX (PART 22) Anonymous Z3R0-06DD21 Industrialized Humanity. (MP3)
https://drive.google.com/file/d/19MDlsvmnGAG8QP80DXYqpxjpdbWSlupo/view?usp=sharing
X ANON DEEPSTATE DOX (PART 22) Anonymous Z3R0-06DD21 Industrialized Humanity.(HD)
https://drive.google.com/file/d/1TfjDi3hj0A9Zkkhv-fF-vFmnOt2Tod6s/view?usp=sharing
X ANON DEEPSTATE DOX (PART 24) Message From ZeroSec - Microsoft, Weber Shandwick and 9/11.(MP3)
https://drive.google.com/file/d/12ZiUCyiyZxTIQyv69CaZOusV_Bwedkok/view?usp=sharing
X ANON DEEPSTATE DOX (PART 24) Message From ZeroSec - Microsoft, Weber Shandwick and 9/11.(HD)
https://drive.google.com/file/d/16ewJu76vOYs_S3d5TdhUSllygjBgCJCu/view?usp=sharing
X ANON DEEPSTATE DOX (PART 25) Message From ZeroSec Club Rome and AIDs.(MP3)
https://drive.google.com/file/d/1FiUNIluVw-Uo5tHWst7Q0IfEj3UXVmbK/view?usp=sharing
X ANON DEEPSTATE DOX (PART 25) Message From ZerSec Club Rome and AIDs.(WMV)
https://drive.google.com/file/d/1rCA-sGaCNZ8jSWoN4M3QkaypJ1snem4V/view?usp=sharing
X ANON DEEPSTATE DOX (PART 27) Message From ZeroSec - Bilderbergs Eternal Liars Part 1. (MP3)..
https://drive.google.com/file/d/1soSxdm2etNikOTEj2U8htAAHLH54h-TF/view?usp=sharing
X ANON DEEPSTATE DOX (PART 27) Message From ZeroSec Bilderbergs Eternal Liars Part 1. (HD)
https://drive.google.com/file/d/1soSxdm2etNikOTEj2U8htAAHLH54h-TF/view?usp=sharing
X ANON DEEPSTATE DOX (PART 28) Message From ZeroSec DSDOX Eternal Liars Part 2 - Bilderbergs and the Eoropean Cancil.(MP3)
https://drive.google.com/file/d/1bESNlI4-6sADWCKhRFM-S8WyjfhkPAnG/view?usp=sharing
X ANON DEEPSTATE DOX (PART 28) Message From ZeroSec DSDOX Eternal Liars Part 2 - Bilderbergs and the European Cancil.(WMV)
https://drive.google.com/file/d/1frE6-u5Bi2L8wnNPYcURwuuvIVLM7EUi/view?usp=sharing
X ANON DEEPSTATE DOX (PART 29) Message From ZeroSec DD29 Eternal Liars Part III Bilderbergs And The European Movement.(MP3)
https://drive.google.com/file/d/1ZDOAiLv71eLRfd6SULaiBGNbO_lOPX70/view?usp=sharing
X ANON DEEPSTATE DOX (PART 29) Message From ZeroSec DD29 Eternal Liars Part III Bilderbergs And The European Movement.(HD)
https://drive.google.com/file/d/1gB-wfnbdhDxJm1DJ8pYWNOAF4CBT76A9/view?usp=sharing

X ANON DEEPSTATE DOX (PART 30) AnonZero 06DD30 Eternal Liars IV Bilederbergs Meet Your Owners.(MP3)
https://drive.google.com/file/d/1PoqcRB2w9TBqGKnYYcmMaXBQdoLzCqC5/view?usp=sharing
X ANON DEEPSTATE DOX (PART 30) AnonZero 06DD30 Eternal Liars IV Bilederbergs Meet Your Owners.(MP4)
https://drive.google.com/file/d/1JD4neyFvvrjuTKZaEBQUKtxjfY47kd6g/view?usp=sharing
X ANON DEEPSTATE DOX (PART 31) ~Z3R06DD32 Biledebergs Meet Your Owners part 2. (MP3)
https://drive.google.com/file/d/1rYyzLoCO6H3xNuI7vH67NoWFCP7JX8Mc/view?usp=sharing
X ANON DEEPSTATE DOX (PART 31) ~Z3R06DD32 Biledebergs Meet Your Owners part 2.(WMV)
https://drive.google.com/file/d/1218LuP14aIsMeBIKmKOOf8GI00z4mAvH/view?usp=sharing
X ANON DEEPSTATE DOX (PART 32) ~06DD31~Mass Brain Washing.(MP3)
https://drive.google.com/file/d/1CIC2fM0Hf5doSVTE56wTPRUeicBWim37/view?usp=sharing
X ANON DEEPSTATE DOX (PART 32) ~06DD31~Mass Brain Washing.(WMV)
https://drive.google.com/file/d/1aR3XNc6bOyOgdeiqzhAZsvPPzLsAJ4QJ/view?usp=sharing
X ANON DEEPSTATE DOX (PART 34) ~Z3R0W4RCRI3ME5 06DD34 The Hidden Fourth Reich. (MP3)
https://drive.google.com/file/d/1KoFSAfwiFk99ZJJV0BP1157NIK3Kpiby/view?usp=sharing
X ANON DEEPSTATE DOX (PART 34) ~Z3R0W4RCRI3ME5 06DD34 The Hidden Fourth Reich. (MP4)
https://drive.google.com/file/d/1PmHfUPbI--pmvD0QIPz5-NHfC1Lh_b9w/view?usp=sharing
X ANON DEEPSTATE DOX (PART 35) Z3R0 06DD35 NW0 PL4NN3D FUK3RY PART 1.(MP3)
https://drive.google.com/file/d/1qcHADmgLhgh5tREXrJU9fh-WBnxJMIsz/view?usp=sharing
X ANON DEEPSTATE DOX (PART 35) Z3R0 06DD35 NW0 PL4NN3D FUK3RY P4RT 1.(MP4)
https://drive.google.com/file/d/1hFozD2GEr7Ik8Rs1OCNAgDsMdNFRffPm/view?usp=sharing
X ANON DEEPSTATE DOX (PART 36) Z3R0 06DD35 NW0 PL4NN3D FUK3RY P4RT II.(MP3)
https://drive.google.com/file/d/1V5y4LN8KMN1MsZKizTgJkn9gMrKRWZ-Q/view?usp=sharing
X ANON DEEPSTATE DOX (PART 36) Z3R0 06DD35 NW0 PL4NN3D FUK3RY P4RT II (MP4)
https://drive.google.com/file/d/1KEg7d_n2Sj5ST7VKKTpQPtAlNy0JVqpS/view?usp=sharing
X ANON DEEPSTATE DOX (PART 37) NWO Fuckery Part 3 [06DD36] ZEROZBRZEZINSKI.(MP3)
https://drive.google.com/file/d/1cOQf5dz4hocSswLEquENiFASbpGjCL5K/view?usp=sharing
X ANON DEEPSTATE DOX (PART 37) NWO Fuckery Part 3 [06DD36] ZEROZBRZEZINSKI. (WMV)
https://drive.google.com/file/d/1olgz__s_F2PqVMydQRL_cGFV7dHI_q1C/view?usp=sharing
X ANON DEEPSTATE DOX (PART 38) ~[06DD33]~How the Nazis win after WW2 with the High Priests of Globalization.(MP3)
https://drive.google.com/file/d/1gxg3IFb34uZatqjI7ltxAcvfLNLHts_C/view?usp=sharing
X ANON DEEPSTATE DOX (PART 38) ~[06DD33]~How the Nazis won after WW2 with the High Priests of Globalization.(WMV)
https://drive.google.com/file/d/1LRi7CD9yID_ZoCLv8YxZykrGQ9WVizso/view?usp=sharing

The line for acceptable behavior when it comes to child pornography just got blurrier in New York. The state's highest court just ruled that viewing child porn online isn't a crime, the Associated Press reports. The decision came down in a hearing for James D. Kent.

Dr. Judith A. Reisman, PhD - Child Protection Institute
https://www.thereismaninstitute.org/home

https://kinseyinstitute.org/collections/archival/index.php

Scientific Study of Sexuality in America
https://www.c-span.org/video/?308841-1/scientific-study-sexuality-america&start=5868
Scientific Study of Sexuality in America
https://m.youtube.com/watch?v=nQqUo_SN8xA&pp=ygUoU2NpZW50aWZpYyBTdHVkeSBvZiBTZXh1YWxpdHkgaW4gQW1lcmljYQ%3D%3D
The Kinsey Syndrome
https://m.youtube.com/watch?v=aJ0JQGoAz4w
How the Gay Agenda Began - FULL DOCUMENTARY
https://m.youtube.com/watch?v=6RuYFy2CuQU&pp=ygUYSG93IHRoZSBnYXkgYWdlbmRhIGJlZ2Fu
Kinsey Sex And Fraud
https://irp.cdn-website.com/957381a6/files/uploaded/Kinsey_Sex_and_Fraud.pdf
Kinsey Sex And Fraud
https://drive.google.com/file/d/1JQARsqLXSArTKMvkSzgt-DLUtAuDps0p/view?usp=sharing
Soft Porn Plays Hardball
https://archive.org/details/SoftPornPlaysHardballJudithReisman1991
Soft Porn Plays Hardball
https://drive.google.com/file/d/1SsBt2SpxcArO_2FnvqG0mhUrTEqnKMfC/view?usp=sharing
Kinsey Crimes & Consequences
https://static1.squarespace.com/static/5aabebd48f51305ed07eef63/t/5b992d016d2a73dd96cfb05a/1536765200968/Kinsey_Crimes_and_Consequences.pdf
Kinsey Crimes & Consequences
https://drive.google.com/file/d/1mcGWZ5noc1xywDXsMAgVJOLDcpDP-ZqV/view?usp=sharing
Sexual Sabotage
how one mad scientist unleashed a plague of corruption and contagion on America
(https://avalonlibrary.net/ebooks/Judith%20Reisman%20-%20Sexual%20Sabotage%20-%20How%20One%20Mad%20Scientist%20Unleashed%20A%20Plague%20Of%20Corruption%20And%20Contagion%20On%20America.pdf)

Sexual Sabotage
https://drive.google.com/file/d/1yLRNR278v4ZS4Bmd_n41F3QnXMpbTsxm/view?usp=sharing
Sexual Sabotage
how one mad scientist unleashed a plague of corruption and contagion on America
(https://drive.google.com/file/d/1qG2jIs6n-6Jw646Q9sLhMNKy_f3xfi4s/view?usp=sharing)
Kinsey-Summit
“Fruit of the Poisoned Tree”
Update on the Battle against Kinsey"
https://protectchildhealth.org/wp-content/uploads/sites/19/2020/03/Kinsey-Summit.pdf
Kinsey-Summit
https://drive.google.com/file/d/1pnR1p_33JHGrq6KKnumzqJiCVnEW0Vc-/view?usp=sharing
Judith Reisman Children in Playboy Penthouse & Hustler
https://www.ojp.gov/pdffiles1/Digitization/109944NCJRS.pdf
Judith Reisman Children in Playboy Penthouse & Hustler
https://drive.google.com/file/d/1fg2c2TElEV4-ceqfGT29bEuWnBsNUKAp/view?usp=sharing
The Kinsey Interview Kit.pdf
https://drive.google.com/file/d/1amQp43HtrgONReFn3wT-ncE2DynV7d6n/view?usp=sharing
Sexual Behavior In The Human Male.pdf
https://drive.google.com/file/d/1nN_5G6SGEf7oqUpniJz3vjFTK1duxLsD/view?usp=sharing
Sexual Behavior in the Human Female PDFDrive .pdf
https://drive.google.com/file/d/13WAPPxDIo5UroLP9_WrzwCSVdRvrYFNb/view?usp=sharing
Foundations America Foundations Their Power and Influence 1958 Rene A Wormser.pdf
https://drive.google.com/file/d/1nwqnTKoaoU5KHndF1sIZnhk0x53Yq-CM/view?usp=sharing
Kinsey's Pedophiles
https://m.youtube.com/watch?v=Ok7mXoGjhKc&pp=ygUUS2luc2V5J3MgUGFlZG9waGlsZXM%3D
The Kinsey Coverup (1/2)
https://m.youtube.com/watch?feature=shared&v=LnsVaYzFibw
The Kinsey Coverup (Part 2/2)
https://m.youtube.com/watch?feature=shared&v=gfSDljk7yxE
The Kinsey Coverup
https://m.youtube.com/watch?feature=shared&v=jwDWVSfpAJU
Stolen Honor Stolen Innocence America Dark Slide Bright Future
America Dark Slide Bright Future
Full text of The Casualties Of Kinsey
The Kinsey corruption : an expose on the most influential "scientist" of our time

"What You Can Learn From the Kinsey Report": Kinsey and the Gay and Lesbian Population, 1970-1993.pdf

https://drive.google.com/file/d/1SiTSqAoNf5LKcQxdtmP-vS4lnmApoZNw/view?usp=sharing
Unmasking Gay Liberation Before Stonewall Alfred C. Kinseys End.pdf
https://drive.google.com/file/d/1FzAkhXyYK6UZpGfPN_WB8TcqVdxQZk4e/view?usp=sharing
BRIEF The Kinsey Institute Exposed A Warning to Parents and Governments 52014.pdf
https://drive.google.com/file/d/1hZBIqj57vvfK0qLPAYdSKU0v8yzbOrXL/view?usp=sharing

The Sexual Revolution and Its Victims, PDF
https://ruthinstitute.org/product/the-sexual-revolution-and-its-victims-pdf/
The Sexual Revolution TOWARD A SELF-REGULATING CHARACTER STRUCTURE by Wilhelm Reich.pdf
https://drive.google.com/file/d/1tK2HApsZQ-1wOLm-DmbTg_gd86mmN_bd/view?usp=sharing
The Sexual Revolution (1945).pdf
https://drive.google.com/file/d/1CrmlBX83Qo57jlmnEYqzIOaRkdk4TV8-/view?usp=sharing
THE GLOBAL Sexual REVOLUTION DESTRUCTION OF FREEDOM IN THE NAME OF FREEDOM.pdf
https://drive.google.com/file/d/1JDiGTXM-xuKM_nFsVGEVqBzJSSnKvey7/view?usp=sharing
The Homosexual Agenda EXPOSING THE PRINCIPAL THREAT TO RELIGIOUS FREEDOM TODAY.pdf
https://drive.google.com/file/d/185DrPdN7rlfYKsTC0kb2ahMTySiDA4Vw/view?usp=sharing

Petition **- Pedophilia is Not a Sexual Orientation**

https://www.change.org/p/donald-j-trump-pedophilia-is-not-a-sexual-orientation?recruiter=1322137153&recruited_by_id=f5481640-8672-11ee-8e8f-4dca6ce718b2&utm_source=share_petition&utm_campaign=psf_combo_share_initial&utm_term=psf&utm_medium=facebook&utm_content=fht-23769384-en-us%3A7
Keep the age of consent for sexual at 18 years of age
https://www.change.org/p/keep-the-age-of-consent-for-sex-at-18-years-of-age
stop the pedophile liberation movement
https://www.change.org/p/stop-the-pedophile-liberation-movement?source_location=search

Humanizing Pedophilia as Stigma Reduction- A Large-Scale Intervention Study - PM.pdf
https://drive.google.com/file/d/1BMqHmb9xBajD0qKtkxNLd_pcUVNwYGeV/view?usp=sharing
The Pedophile as a Human Being- An Autoethnography for the Recognition of a Marg.pdf
https://drive.google.com/file/d/1zibXBDgEkVa7VudwPan2P26jylPxGAdO/view?usp=sharing
Pedophile, Child Lover, or Minor-Attracted Person? Attitudes Toward Labels Among.pdf
https://drive.google.com/file/d/1otIOQk1JPEjrEWIOUnExNMXCHmgnrJ0T/view?usp=sharing
Now pedophilia is not a sexual orientation says APA | Blog.pdf
https://drive.google.com/file/d/1Z0F2ZJWDdGSvhrjcag743yq5i_q_Zeo2/view?usp=sharing
Homosexuality and Pedophila- The False Link | HuffPost.pdf

https://drive.google.com/file/d/1SyW1B8fBvajwMTiYDxk1I8MMF171T_px/view?usp=sharing
Pedocriminality- Why We Should Stop Using the Word Pedophilia When Discussing Ch.pdf
https://drive.google.com/file/d/1flOMxpVgVuWmrbPHCg2ZzJ1uiQohl3gK/view?usp=sharing
Why pedophilia is evil and why its supporters must be called what they are | by .pdf
https://drive.google.com/file/d/1R2q6oYQGDW8kJ4NdzhbrL5TI5j2-Rfpb/view?usp=sharing
Pedophiles and homosexuals – apples and oranges? | Practical Ethics.pdf
https://drive.google.com/file/d/1OCtr9GhdBVvmf6sJR6EtUxYPIf-DMrUR/view?usp=sharing
sexuality - To what degree do fetishes differ from conventional sexual orientati.pdf
https://drive.google.com/file/d/1OMPj6FtWcO4QQ8i4elSOXToBtb5OyX9B/view?usp=sharing
I, Pedophile | NAASCA.org - National Association of Adult Survivors of Child Abu.pdf
https://drive.google.com/file/d/1izd5rCHXQrdTxdbj3ivLgYwAMUV69xjK/view?usp=sharing

John Todd Secrets Of Illuminati part 1
https://drive.google.com/file/d/1G29dWx6Gm3lMnAfDUNH5S4OYBh__C5b0/view?usp=sharing
John Todd Secrets Of Illuminati part 2
https://drive.google.com/file/d/133AFVVTVlbzggxrbJKBHMPsZ3ngwiMcw/view?usp=sharing

21.mp3 tracks

THE BLACK AWAKENING!
1 Extra Past Seminar On The Black Awakening.mp3
https://drive.google.com/file/d/1CuNsG6LZzkICRozwJ5Dxb6l0BZpTjrFc/view
2 Introduction And overview.mp3
https://drive.google.com/file/d/14i-O7lNqfnTZd5oef3pz5VbFcotQcZi2/view
3 Play Is Forward The Satanic End Game.mp3
https://drive.google.com/file/d/1lnnlts-Yj4TWzazBhVBdmJtG3ZTRvpsT/view
4 Critical Mass And The Stock Pile Of Dark Powe
https://drive.google.com/file/d/1spKjayQcTK7ZuokX_TvkUxJYPMqKyJDM/view
5 GREAT REVOLT-A RITUAL BLOOD BATH.mp3
https://drive.google.com/file/d/1RNDpv8zQtTWkx6NbhxQ2oTalVj1chPCQ/view
6 BLACK AWAKENING-COLLASPING THE WALL.mp3
https://drive.google.com/file/d/19lEcaXWsmoOKeGYsmg6X8OS_1-5cLCDs/view
7 BASESSIONSIXELIMANATION.mp3
https://drive.google.com/file/d/1sYCaZyVT4V7pkJWjRodXc55sKFzsQsfj/view
8 BASESSIONSEVENBONDINGRITUAL.mp3 https://drive.google.com/file/d/1zkGMMJCJk-3BhvcErk4IhpugVTFAPbf8/view
9 BASESSION8ELITEBROTHERHOOD.mp3 https://drive.google.com/file/d/1ddn2gsl1c-2l2rVwrmjuRGuwFTWHJIPB/view

10 BASESSIONNINECHOSENONES.mp3 https://drive.google.com/file/d/12siC2-LqGwvxn5EXo4Iar1rseqc_b0z5/view
11 BLACKAWAKENINGSESSION10.mp3
https://drive.google.com/file/d/1v8njLRZXbgd2UAawpgSfY6s2_-J-QOzR/view
12 BLACKAWAKENINGSESSIONINFILTRATION11.mp3
https://drive.google.com/file/d/1kifhnnqbFMluwLeI86P5hKHrHk-RmdRP/view
13 BLACKAWAKENINGSESSIONSLEEPERS12.mp3 https://drive.google.com/file/d/1g5l7Kd0x26C0ZqoOo4DDSXek-phvQats/view
14 BLACKAWAKENINGSESSION13 HANDLERS.mp3
https://drive.google.com/file/d/16pmJQb_xYa7zQFOfsvYZuB52HqADOZhl/view
15 BLACKAWAKENINGSESSION14DAYACTIVATION.mp3
https://drive.google.com/file/d/1_pnrrx38ZyFAkIYTMfWDdi_HwfStNZZb/view
16 BLACKAWAKENINGSESSION15THELAMB.mp3
https://drive.google.com/file/d/1ZmoDjCNdn5c7CUZVCeAnin2P3_GdYm8L/view
17 BASESSION16greatestingathering.mp3 https://drive.google.com/file/d/1OatUVlDS-CjiJanWcp_gvXJqJsYgcjaC/view
18 BLACKAWAKENINGSESSION17.mp3
https://drive.google.com/file/d/1lXcpmytzbfQhtN31_zj92eeNO5n-p3aH/view
19 BLACKAWAKENINGSESSION18.mp3
https://drive.google.com/file/d/13HuwgVpgKmvZeMN5ruwkPC7Q5gbbzgil/view
20 BLACKAWAKENINGSESSION19.mp3
https://drive.google.com/file/d/1NtCAi3ryGzuf-IAzCbJykLky8_ghLmpp/view
21 BLACKAWAKENINGSESSION20.mp3
https://drive.google.com/file/d/1GKBtzOiV45mca-zzxFmLzDeulbW0rUPd/view

409 videos

1 video

"Magicians" Prove A Spiritual World Exists-The Last Version.mp4
https://drive.google.com/file/d/1V242_aEFaG5FN9LFbwIyOKgR1_0nYCdZ/view?usp=sharing

1 video

The song the illuminati DOES NOT want you to hear Performed By Anthony J Hilder.mp4
https://drive.google.com/file/d/1ZZGdeC-nTaijSd0PqN9LTGPe7Ml5dWe3/view?usp=sharing

1 video

An Interview with Aaron Russo (FULL).mp4
https://drive.google.com/file/d/1hrRS9U-nfArpUbKwW0v20mu3rLeMsE7m/view?usp=sharing

1 video

The Garrison Tapes_ A John Barbour Film.mp4
https://drive.google.com/file/d/1kH5euXUQQLtiKfdtBAVXC4emfB6QeQlg/view?usp=sharing

6 videos Loose Change
Loose Change (American coup).mp4
https://drive.google.com/file/d/1abOoE3pgNh0lXDtUU4C3gKG5sJqreR1b/view?usp=sharing
LooseChange 2nd edition (orginal version).mp4
https://drive.google.com/file/d/1lJ8cU4HlBTYCSsX-k7zGYbqlpP-WSwoa/view?usp=sharing
Loose Change 2nd edition (recut).mp4
https://drive.google.com/file/d/1am2QDIAwBhn3av6ZAiqaDkbm0xDpXlCd/view?usp=sharing
Loose Change 2nd Edition (Remastered and Re-edited).mp4
https://drive.google.com/file/d/15afNWuHa31fkPB2J7218XPoF44jx0CEa/view?usp=sharing
loose change 1st cut.mp4
https://drive.google.com/file/d/1uqDC033qI8h4v5QUbRCfXbKBqK042olz/view?usp=sharing
Loose Change final cut.mp4
https://drive.google.com/file/d/1l8vGklmKmz5VE_2yWn2SmoGn0_d76ZBm/view?usp=sharing

1 video

ANONYMOUS MANIFESTO.mp4
https://drive.google.com/file/d/1aXGj--xHh484Np2xVRaFUTyCPfcdkBjH/view?usp=sharing

2 videos

GMO A Go Go! - English.mp4
https://drive.google.com/file/d/1MUCOl5U0mTqXZLLPDH0aQLMwVqZJx1Kp/view?usp=sharing
Seeds of Death Unveiling The Lies of GMO's Full Movie.mp4
https://drive.google.com/file/d/1qVHdCiPvA_qz2oo9JCtPCEMbku452dDh/view?usp=sharing

1 video

The Great Culling - Our Water Documentary Film.mp4 https://drive.google.com/file/d/1Vkyl7aEfzHCi2akD3hGcSzSHfbcR2vFH/view?usp=sharing

1 video

MASS PSYCHOSIS - How an Entire Population Becomes MENTALLY ILL.mp4
https://drive.google.com/file/d/1BlpzN14g825xWIYsYpw67i-WpLyRCJIP/view?usp=sharing

1 video

Wake Up Call – New World Order (Full Doc - 2008).mp4
https://drive.google.com/file/d/1-kQQbjczKhnl1KF2oNNgOAFwTJAdBRBp/view?usp=sharing

1 video

Meet your strawman.mp4
https://drive.google.com/file/d/1Dfp5FHSaPx2F5_BSmt41EvhmA_kFkwSa/view?usp=sharing

1 video

OBAMA IDENTITY REVEALED   FINAL CUT   PREDICTION OBAMA WILL BE HUNG FOR TREASON.mp4
https://drive.google.com/file/d/1BWmXSu2Ywe4dmZcrDd6QA-feysIMQ9OA/view?usp=sharing

1 video

The James Holmes Conspiracy.mp4
https://drive.google.com/file/d/1p17M005bVixblG0lxhcDRo54HlK0wgj9/view?usp=sharing

1 video

Agenda 21 The Depopulation Agenda For a New World Order.mp4
https://drive.google.com/file/d/15tsmUAunTQQBbfHzwICSLM_w0rCWUsTp/view?usp=sharing

2 videos

Leuren Moret Google And The Push To Control Your DNA.mp4
https://drive.google.com/file/d/1-DvHNLcXpfN3XpzWEXMHeHtHwfaSPvSH/view?usp=sharing
HAARP - Chemtrails - How They are Change You - Bioengineering.mp4

https://drive.google.com/file/d/16t6FAE-VJF9H8WRa6I3OMuxCzBUVSVj4/view?usp=sharing

3 video

PROJECT BLUE BEAM of NASA.mp4
https://drive.google.com/file/d/1i54_nEMjcxlNWXkNyEamAX9LYownvyVh/view?usp=sharing

Project Blue Beam Alien Technology
https://drive.google.com/file/d/1SLDFJpGHA24Wq73jLkTcL9PHiZM1uOkJ/view?usp=sharing
Oh Anonymous U.S. Ordered Guillotines.mp4
https://drive.google.com/file/d/1amFIAEcOUuUZozI3PX90wnS8swEqlMYn/view?usp=sharing

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by Sai Anarchy
"There is no peace for those who wonder on my path, no escape shall they find. For when I shine my light on them, they will be forever mine."
Part One Chapters:
- Eisen Und Blut
- Pan

Message From Anon~DK Pan~HD
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- Knights

Message From Anon~DK Knights~HD
https://drive.google.com/file/d/1PBUruWti8okuOvE_f2_Tuv8qdiJ-Opf7/view?usp=drive_web
- Jesuit

Message From Anon~DK Jesuits~HD
https://drive.google.com/file/d/1Sun8KNVq0rtznp_FLQxtXQVF9kM9qisz/view?usp=drive_web
- DuPont

Message From Anon~DK The Duponts~HD
https://drive.google.com/file/d/1gDYqaUlZSmW-Od1Wi7N2GHIT6yrQaucl/view?usp=drive_web
- Astor

Message From Anon~DK The Astors~HD
https://drive.google.com/file/d/1Xvn3ZHCR7o_qqQ1eB5M8AlRNkGicq2d8/view?usp=drive_web
- Collins

Message From Anon~DK The Collins~HD

https://drive.google.com/file/d/1ILkk54bLN0oGfmQsbTWjj7e-5L1Xxgpo/view?usp=drive_web

- The R's

Message From Anon~DK The R’s~HD

https://drive.google.com/file/d/1YRagpWqlemd7nDbMY1jGdPQNSDlA-rpk/view?usp=drive_web

- Vanderbilt
- Bundy

Message From Anon~ DK A Bit of Bundy

https://drive.google.com/file/d/1bLexnNwnHoUWLPmnNemvmGpr8AlpPo2H/view?

- Kennedy

Message From Anon~DK Kennedy~HD

https://drive.google.com/file/d/1c7AMPIJoKAhpp5jiVif9uO3Eo4Hj7nkL/view?

- Onassis & Li

Message From Anon~DK Onassis & Li~HD

https://drive.google.com/file/d/1boFUc83r0MdkeHvTOLlq7TpqcRGWrrkp/view?usp=drive_web

- Van Duyn

Message From Anon~DK Van Duyn~HD

https://drive.google.com/file/d/1jQu_JPN93LQNESqSYMZBQw8_xsh-Fu_A/view?usp=drive_web

- Millennium

Message From Anon~DK Millenium

https://drive.google.com/file/d/1r-bgSFF370K1rThVKARK_tngNprifXHU/view

- Blood

Message From Anon~DK There Will Be Blood

https://drive.google.com/file/d/1iCcqP3Daue13O-UUo9GuurxLSr1fIFii/view?usp=drive_web

Part Two Chapters:

- White Pope

Message From Anon~DK The White Wizard

https://drive.google.com/file/d/1JwKIrZbPGEe4fSYR3tI8lwqC9BHa372M/view?

- Black Pope
- Farnese

Anonymous Families Who Rule The World Farnese Family

https://drive.google.com/file/d/1QkngU2I3lHVZYcD3jSJ3GdMyKKfxBCgJ/view?usp=drive_web

- Orsini

Anonymous Families Who Rule The World Orsini Family

https://drive.google.com/file/d/1ZHa0V-yXWp1rjzk6mZ-61xXMkXhhQcVy/view?usp=drive_web

Anonymous Families Who Rule The World Orsini family

https://drive.google.com/file/d/1_3Oeu1nKpzWnWv2Y-0gZ-7cI3T57OI_M/view?usp=drive_web

- Aldobrandini

Anonymous Families Who Rule The World Aldobrandini Family

https://drive.google.com/file/d/1a6sLPOkcd56epMeSTlaEntU1gZN-_gbL/view?usp=drive_web
- Somaglia
- Breakspear

Message From Anon~DK Somagilia And Breakespear
https://drive.google.com/file/d/1xZxmZBf14GgvMMQb1lmU46gDjNzELpe2/view?usp=drive_web

13 videos Extension to EL The Bloodlines

1 Message Enter the Dragon~HD
https://drive.google.com/file/d/1of-rxcNA1hzxTSVMJ4d8rqZr8Ixk4Tp8/view
2 Anonymous Families Who Rule The World The Bloodlines Asian Persuasion Anon~DK
https://drive.google.com/file/d/1hQN9edRYk7f5c7R5kdqrqQ2e8dP-bjlk/view
3 Anonymous Families Who Rule The World VATICAN TWO POPES WHITE BlACK POPES.... JESUITS NWO ILLUMINATI BLOODLINES EXPLAINED L33T
https://drive.google.com/file/d/1YVZI5X-xbEi_LFLhCFQh_fWbRf3ShTgV/view?usp=drive_web
4 Message From Anon~DK ~ Rulers of New World Orders Past
https://drive.google.com/file/d/1MVo3COqDJnBRcCPUYzm2b4CQ_A6UWqWw/view
5 Message From Anon~DK In the Beginning~HD
https://drive.google.com/file/d/1WHb4JlAmWHeo94gCrmgt7KuJ9tVzBYhQ/view?usp=drive_web
6 Message From Anon~DK The Road to Rome~HD
https://drive.google.com/file/d/118osTvZksaZlmEBlnjkCaU9ythfRpKLY/view?usp=drive_web
7 Message From Anon~DK Out of the Woods~HD
https://drive.google.com/file/d/1kwFy3JKV-TpMa7CU8NE7LJDm1g6zxwx7/view?usp=drive_web
8 ANONYMOUS URGENT 3 CALAMITIES COMING ON THE EARTH
https://drive.google.com/file/d/17Yw0W880fcpvlyWWePVW2cxhZ_cCNzHM/view
9 Message From Anon~DK Bloodmoney~HD
https://drive.google.com/file/d/1G_efoBsAn1vZ882nAC8NuwKhB4foZ0DL/view?usp=drive_web
10 Message From Anon~DK Dying for Truth~HD
https://drive.google.com/file/d/1UeO-aNBV7Q7Tut_jjfhHqEo3tP65XMjk/view?usp=drive_web
11 Message From Anon~DK Infection~HD
https://drive.google.com/file/d/1QTxQEDnQvvPNZEh2ApP9YSd_wFCoxv_A/view?usp=drive_web
12 Message From Anon~DK Behold The King Of The New World Order
https://drive.google.com/file/d/15AKUs6BpsC9DdXZG7EqzzxErSlIYDTDg/view?usp=drive_web
13 Message From Anon~DK Welcome To The New World Order
https://drive.google.com/file/d/1vjUr4uS7ll6fRO6pxVKMZtKmq2C-KiWB/view?usp=drive_web

25 videos Do Bot Be deceived

1 Anonymous If This Doesn't Open Your Eyes Nothing Will!
https://drive.google.com/file/d/1gvMuZ0Q9bwtJ4WFEZiQySuISu-4CRNfM/view
2 Terrifying Anonymous Message RedCode 2017
https://drive.google.com/file/d/15HG29Uqzx26mVjmXENHaxX0buhsOlLu-/view
3 Anonymous - The TRUTH about WW3 I-II
https://drive.google.com/file/d/1lN56nA6gWWQMorbpFPJvoBkt3SrUi5wp/view
4 Anonymous WORLD WAR 3 has begun! - 2017
https://drive.google.com/file/d/1Ad5eLt4lD31zMIchV4yHBU6kO_wNgVJj/view
5 Anonymous Great Deception is Coming... CERN ALERT MESSAGE 2018-2019
https://drive.google.com/file/d/1y5aUvCkIZhD7mwDGbObzzPQcYxKZVz3m/view
6 Message From Anon~DK ~ The Deception Continues
https://drive.google.com/file/d/1qXpISnuzq9xD71u-kD4AMjttnyP7wmzk/view
7 ANONYMOUS URGENT 3 CALAMITIES COMING ON THE EARTH
https://drive.google.com/file/d/17Yw0W880fcpvlyWWePVW2cxhZ_cCNzHM/view
8 Anonymous Great Deception is Coming CERN ALERT MESSAGE 2018-2019
https://drive.google.com/file/d/13Dq5Q-QBaKmAOhsPiz3RerHe5n0JbcaC/view
9 Anonymous Warning to Humanity - Do Not Be Deceived
https://drive.google.com/file/d/1neKCIWAO2mtZgGv2mfsdDsl1rodVjeCR/view
10 Message From Anon~DK ~ Warning to humanity PART 2 DO NOT BE DECEIVED
https://drive.google.com/file/d/1neKCIWAO2mtZgGv2mfsdDsl1rodVjeCR/view
11 Warning to humanity DO NOT BE DECEIVED ~ A Tale of 2 Cities ~ HD
https://drive.google.com/file/d/1AquiBiABk-pa8JHRRqvbD189nNdK3rUw/view
12 Message From Anon~DK ~ DO NOT BE DECEIVED Part 2 Timeline of Events
https://drive.google.com/file/d/1uu_ez4BaXXq65Nwvb9TxKs1zBr7wmjT4/view
13 Message From Anon~DK ~ Warning to humanity PART 2 DO NOT BE DECEIVED
https://drive.google.com/file/d/1g3jgDsy9SVqy06RHGsR08PPCCvbRkYTt/view
14 A Message To Fake Anonymous And The Deceived
https://drive.google.com/file/d/1xEcCxbWWMMHm3fGOZP0n0rReURgxgkZ_/view
15 Anonymous - This will Change How You See Everything... (2018-2019)
https://drive.google.com/file/d/1WUzqcaZblytTUIn8Ftr1OObM0cefwQlk/view
16 Families In Agenda New World Order 2017 J.F.K Warning WW3
https://drive.google.com/file/d/1Ezwjne5GF3BFw-GWKa9JPJ7Rm5EDTIuA/view
17 ANONYMOUS EXPOSED November 5 One DATE In THREE TIME TRAVEL Movies THREE Years Apart
https://drive.google.com/file/d/1PKsOQw8jZrTVuIyG9UGiuCaGuknN9-g4/view
18 Anonymous Exposed
https://drive.google.com/file/d/1PKsOQw8jZrTVuIyG9UGiuCaGuknN9-g4/view
19 Anonymous Exposed

https://drive.google.com/file/d/1u2lRkZsELvUKBCCL4JLAHYZlw4SdlGwQ/view
20 ANONYMOUS IS THE CIA
https://drive.google.com/file/d/1dJ_b8v8aFJ-JL-DQoC4moUHdVb0j8cay/view
21 Anonymous The Truth May Scare You!
https://drive.google.com/file/d/1RrqcEhePbcQVo5ijjhhg-3cXYOf5gWm-/view
22 Anonymous. 5G Grid, Geordie Rose, CERN. Why should we be worried Message from The Collective HQ
https://drive.google.com/file/d/1KeVHjwZV00ZD7FyVDvEKQ1oq8GKYjjIg/view
23 Anonymous. If You Think You Can Handle The Truth, Well Here It Is!
https://drive.google.com/file/d/1esgqLTmvAoelW3N7QFtxakUqSNMjR5YU/view
24 From Anonymous If you think you can handle the truth, well here it is!
https://drive.google.com/file/d/1YeL31l7Tdhvs9qwKyYptu_0OsyvtZQXx/view
25 ANONYMOUS IS BACK!! 2016 UNCOVERING THE NEW WORLD ORDER PLANS
https://drive.google.com/file/d/1aQFvvOuj1Hqu5DdN_vaUd0tzF1Twh225/view

4 part series Waves of Intelligence

1 Message from Anon~DK Waves of Intelligence-HD
https://drive.google.com/file/d/1MueGMcCRa6GFpuPQMb29jbPtvnhoNSOb/view
2 Message from Anon~DK Waves of Intelligence Part II The Mandela Effect~HD
https://drive.google.com/file/d/16qMZBFlhYaqU5k16vHlLZUaeh6jONRaW/view
3 Message From Anon~Dk Waves of Intelligence part III The Quantum Experience
https://drive.google.com/file/d/1xzd4k8btCaSYQ6vf8ETXE6bldEkq05cB/view
4 Message From Anon~Dk: ~Waves of Intelligence VI: Bio Hacking
https://drive.google.com/file/d/1wuJyj9MjKHp2nkbEwjCaexVsWBUOmXiF/view

5 Anonymous movies

1 Anonymous Movie The L33t~HD.mp4
https://drive.google.com/file/d/1Kh2vKEOeX2NH1Yy24llinuMdaZbbR0He/view
2 The REAL Leaders Of The World (Must See Documentary) - HD
https://drive.google.com/file/d/1MmRBal4M0RX3qO9ofOSAvNh-WiO8I4Fd/view?usp=drive_web
3 Message From Anon~DK ~The War on All Fronts
https://drive.google.com/file/d/1Xu7jCUSwvHVXGapzmgXL3PhvnzvqjaUY/view
4 Anonymous The Solution (Official Movie)
https://drive.google.com/file/d/1A784siMtwWYaMsL-ff3xdt-_tQK6lyR4/view
5 Message From Anon DK~The Point Of No Return Mark Of The Beast~Anonymous Construct
https://drive.google.com/file/d/11lVxFfyl5Jyb8FmOrMof0J12x50Vi0b_/view

1 video

The Royal Red Dragon Bloodlines-HQ
https://drive.google.com/file/d/13EE4YOb7rn9dFWoknC5fvUfh1DQDZt3K/view?usp=drive_web

7 videos The Randal Turner Ring

1 ~ Message From Anon~DK ~ The Randal Turner Ring
https://drive.google.com/file/d/14zcl316U5xS5bU_ka0wG-Fp9OVa1TOq-/view
2 ~ Message From Anon~DK ~ Randal Turner Reagan Assassination MkUltra Survivor
https://drive.google.com/file/d/1pUodnZ1G1r80zJhzdSuVqgqSCefvcLd0/view
3 ~ Message From Anon~DK ~ A Life in MKUltra~HD
https://drive.google.com/file/d/1exGDg_2J6vvFwzGNkfOXVpHbUBPy59SO/view
4 ~ Message From Anon~DK ~ We Must Help Randal Turner
https://drive.google.com/file/d/14i4ZwzJujDe3jIX8SUKfMnEr_4znQx51/view
5 ~ Message From Anon~DK ~ The Truth About Corey Haim~HD
https://drive.google.com/file/d/1AvkBuUqjWZQkhO152imkF1-TBEmNQdIa/view
6 ~ Message From Anon~DK ~ Operation Justice I When Rapists Roam Free in the Home of the Brave
https://drive.google.com/file/d/1cRfBpnOjBY0g-9fTTX3XBBNuz_WQsKwx/view
7 ~ Message From Anon~DK ~ Act of Justice Please Support Randal Turner
https://drive.google.com/file/d/10Vi5dbNhOrHg2Pi2vnaUS4XHWNtsr_3d/view

2 videos The Elites Tools of WAR.

Anonymous. NEW! The Elites Tools of WAR. Part 1 via The Collective HQ.mp4
https://drive.google.com/file/d/15z8YkyGJSrSlQKZcT4YNWPYrjspiv-Xv/view?usp=sharing
Anonymous. NEW! The Elites Tools of WAR. Part 2 via The Collective HQ.mp4
https://drive.google.com/file/d/1-xAF3XWOX4VZAIIX-tJZ-jU2ScIBVKqH/view?usp=sharing

2 videos ANONYMOUS. The Collective Podcast

ANONYMOUS. The Collective Podcast, Audio Re-broadcast.# part 1 TheQllective#2Q19.mp4
https://drive.google.com/file/d/1niIX34kyVmihooihdcvgcBrGRW3hYrSk/view?usp=sharing
ANONYMOUS. The Collective Podcast, Audio Re-broadcast.# part 2 TheQllective #2Q19 (2).mp4
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34 videos 34.mp3 DeepState DOX

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X ANON DEEPSTATE DOX (PART 14).mp3

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X ANON DEEPSTATE DOX (PART 14).wmv

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X ANON DEEPSTATE DOX (PART 15).mp3

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X ANON DEEPSTATE DOX (PART 15).wmv

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X ANON DEEPSTATE DOX (PART 16) FINALE.mp3

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X ANON DEEPSTATE DOX (PART 16) FINALE.wmv

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X ANON DEEPSTATE DOX (PART 17) Anonymous - 06DD17 The Alphabets, Bribes, Fake-Book and Spin Hell.mp3

https://drive.google.com/file/d/1NBYm-7AsG1OSk4Jise9gm9WJrCPtroPC/view?usp=sharing https://drive.google.com/file/d/1NBYm-7AsG1OSk4Jise9gm9WJrCPtroPC/view?usp=drive_web

Anonymous - Deep State Dox part) 06DD17) The Alphabets, Bribes, Fake-Book and Spin Hell.wmv

https://drive.google.com/file/d/1gRLf0hwCO1DRlIluXesnriLmvrc6pGjZ/view?usp=sharing https://drive.google.com/file/d/1gRLf0hwCO1DRlIluXesnriLmvrc6pGjZ/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 18) Anonymous Z3R0S3C 06DD18 Club of Rome.mp3

https://drive.google.com/file/d/1mgdgKG5_HZfuL-f6ud8jRkUIUedyVHNa/view?usp=sharing https://drive.google.com/file/d/1mgdgKG5_HZfuL-f6ud8jRkUIUedyVHNa/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 18) Anonymous Z3R0S3C 06DD18 Club of Rome.wmv

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X ANON DEEPSTATE DOX (PART 19) Anonymous Z3r0S3c-06DD19 Professional Liars (Part 1).mp3

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X ANON DEEPSTATE DOX (PART 19) Anonymous Z3r0S3c-06DD19 Professional Liars (Part1).wmv https://drive.google.com/file/d/1xH2IQ1FtTm5mH7yNVRdGCvIoC7SXpFT4/view?usp=sharing https://drive.google.com/file/d/1xH2IQ1FtTm5mH7yNVRdGCvIoC7SXpFT4/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 20) Anonymous Z3R006DD19 Professional Liars (Part 2).mp3

https://drive.google.com/file/d/14d_aNEZGFRy1966qSQSqxKcIwLGSqiaA/view?usp=sharing https://drive.google.com/file/d/14d_aNEZGFRy1966qSQSqxKcIwLGSqiaA/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 20) Anonymous Z3R006DD19 Peofessional Liars (Part 2).wmv

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X ANON DEEPSTATE DOX (PART 21) Anonymous Z3R0S3C06DD20 News Corp and Hellish Minions. (MP3)

https://drive.google.com/file/d/10Aqjmt-dZPGc-g6CFiWEau9yHiKnn1Fj/view?usp=sharing https://drive.google.com/file/d/10Aqjmt-dZPGc-g6CFiWEau9yHiKnn1Fj/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 21) Anonymous Z3R0S3C06DD20 News Corp and Hellish Minions. (HD)

https://drive.google.com/file/d/1AhlAhH7bNWXQwL28k8tIndEZrl88LBCM/view?usp=sharing https://drive.google.com/file/d/1AhlAhH7bNWXQwL28k8tIndEZrl88LBCM/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 22) Anonymous Z3R0-06DD21 Industrialized Humanity. (MP3)

https://drive.google.com/file/d/19MDIsvmnGAG8QP80DXYqpxjpdbWSlupo/view?usp=sharing https://drive.google.com/file/d/19MDIsvmnGAG8QP80DXYqpxjpdbWSlupo/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 22) Anonymous Z3R0-06DD21 Industrialized Humanity.(HD)

https://drive.google.com/file/d/1TfjDi3hj0A9Zkkhv-fF-vFmnOt2Tod6s/view?usp=sharing https://drive.google.com/file/d/1TfjDi3hj0A9Zkkhv-fF-vFmnOt2Tod6s/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 24) Message From ZeroSec - Microsoft, Weber Shandwick and 9/11.(MP3)

https://drive.google.com/file/d/12ZiUCyiyZxTIQyv69CaZOusV_Bwedkok/view?usp=sharing https://drive.google.com/file/d/12ZiUCyiyZxTIQyv69CaZOusV_Bwedkok/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 24) Message From ZeroSec - Microsoft, Weber Shandwick and 9/11.(HD)

https://drive.google.com/file/d/16ewJu76vOYs_S3d5TdhUSllygjBgCJCu/view?usp=sharing https://drive.google.com/file/d/16ewJu76vOYs_S3d5TdhUSllygjBgCJCu/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 25) Message From ZeroSec Club Rome and AIDs.(MP3)

https://drive.google.com/file/d/1FiUNIluVw-Uo5tHWst7Q0IfEj3UXVmbK/view?usp=sharing https://drive.google.com/file/d/1FiUNIluVw-Uo5tHWst7Q0IfEj3UXVmbK/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 25) Message From ZerSec Club Rome and AIDs.(WMV)

https://drive.google.com/file/d/1rCA-sGaCNZ8jSWoN4M3QkaypJ1snem4V/view?usp=sharing https://drive.google.com/file/d/1rCA-sGaCNZ8jSWoN4M3QkaypJ1snem4V/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 27) Message From ZeroSec - Bilderbergs Eternal Liars Part 1. (MP3)..

https://drive.google.com/file/d/1soSxdm2etNikOTEj2U8htAAHLH54h-TF/view?usp=sharing https://drive.google.com/file/d/1HhspaeFNqUYF5DfOftqljKAvabvezglz/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 27) Message From ZeroSec Bilderbergs Eternal Liars Part 1. (HD)

https://drive.google.com/file/d/1soSxdm2etNikOTEj2U8htAAHLH54h-TF/view?usp=sharing https://drive.google.com/file/d/1soSxdm2etNikOTEj2U8htAAHLH54h-TF/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 28) Message From ZeroSec DSDOX Eternal Liars Part 2 - Bilderbergs and the Eoropean Cancil.(MP3)

https://drive.google.com/file/d/1bESNlI4-6sADWCKhRFM-S8WyjfhkPAnG/view?usp=sharing https://drive.google.com/file/d/1bESNlI4-6sADWCKhRFM-S8WyjfhkPAnG/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 28) Message From ZeroSec DSDOX Eternal Liars Part 2 - Bilderbergs and the European Cancil.(WMV)

https://drive.google.com/file/d/1frE6-u5Bi2L8wnNPYcURwuuvlVLM7EUi/view?usp=sharing https://drive.google.com/file/d/1frE6-u5Bi2L8wnNPYcURwuuvlVLM7EUi/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 29) Message From ZeroSec DD29 Eternal Liars Part III Bilderbergs And The European Movement.(MP3)

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X ANON DEEPSTATE DOX (PART 29) Message From ZeroSec DD29 Eternal Liars Part III Bilderbergs And The European Movement.(HD)

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X ANON DEEPSTATE DOX (PART 30) AnonZero 06DD30 Eternal Liars IV Bilederbergs Meet Your Owners.(MP3)

https://drive.google.com/file/d/1PoqcRB2w9TBqGKnYYcmMaXBQdoLzCqC5/view?usp=sharing https://drive.google.com/file/d/1PoqcRB2w9TBqGKnYYcmMaXBQdoLzCqC5/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 30) AnonZero 06DD30 Eternal Liars IV Bilederbergs Meet Your Owners.(MP4)

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X ANON DEEPSTATE DOX (PART 31) ~Z3R06DD32 Biledebergs Meet Your Owners part 2. (MP3)

https://drive.google.com/file/d/1rYyzLoCO6H3xNuI7vH67NoWFCP7JX8Mc/view?usp=sharing https://drive.google.com/file/d/1rYyzLoCO6H3xNuI7vH67NoWFCP7JX8Mc/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 31) ~Z3R06DD32 Biledebergs Meet Your Owners part 2.(WMV)

https://drive.google.com/file/d/1218LuP14aIsMeBIKmKOOf8Gl00z4mAvH/view?usp=sharing https://drive.google.com/file/d/1218LuP14aIsMeBIKmKOOf8Gl00z4mAvH/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 32) ~06DD31~Mass Brain Washing.(MP3)

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X ANON DEEPSTATE DOX (PART 32) ~06DD31~Mass Brain Washing.(WMV)

https://drive.google.com/file/d/1aR3XNc6bOyOgdeiqzhAZsvPPzLsAJ4QJ/view?usp=sharing https://drive.google.com/file/d/1aR3XNc6bOyOgdeiqzhAZsvPPzLsAJ4QJ/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 34) ~Z3R0W4RCRI3ME5 06DD34 The Hidden Fourth Reich. (MP3)

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X ANON DEEPSTATE DOX (PART 34) ~Z3R0W4RCRI3ME5 06DD34 The Hidden Fourth Reich. (MP4)

https://drive.google.com/file/d/1PmHfUPbI--pmvD0QIPz5-NHfC1Lh_b9w/view?usp=sharing https://drive.google.com/file/d/1PmHfUPbI--pmvD0QIPz5-NHfC1Lh_b9w/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 35) Z3R0 06DD35 NW0 PL4NN3D FUK3RY PART 1.(MP3)

https://drive.google.com/file/d/1qcHADmgLhgh5tREXrJU9fh-WBnxJMIsz/view?usp=sharing https://drive.google.com/file/d/1qcHADmgLhgh5tREXrJU9fh-WBnxJMIsz/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 35) Z3R0 06DD35 NW0 PL4NN3D FUK3RY P4RT 1.(MP4)

https://drive.google.com/file/d/1hFozD2GEr7Ik8Rs1OCNAgDsMdNFRffPm/view?usp=sharing https://drive.google.com/file/d/1hFozD2GEr7Ik8Rs1OCNAgDsMdNFRffPm/view?usp=drive_web

X ANON DEEPSTATE DOX (PART 36) Z3R0 06DD35 NW0 PL4NN3D FUK3RY P4RT II.(MP3)

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X ANON DEEPSTATE DOX (PART 36) Z3R0 06DD35 NW0 PL4NN3D FUK3RY P4RT II (MP4)

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X ANON DEEPSTATE DOX (PART 37) NWO Fuckery Part 3 [06DD36] ZEROZBRZEZINSKI.(MP3)

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X ANON DEEPSTATE DOX (PART 37) NWO Fuckery Part 3 [06DD36] ZEROZBRZEZINSKI. (WMV)

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X ANON DEEPSTATE DOX (PART 38) ~[06DD33]~How the Nazis win after WW2 with the High Priests of Globalization.(MP3)

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X ANON DEEPSTATE DOX (PART 38) ~[06DD33]~How the Nazis won after WW2 with the High Priests of Globalization.(WMV)

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6 What is Back to the Future Really About Part 3 - Mr. Sandman HD
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7 What is Back to the Future Really About Part 4 - Illuminati Initiation HD
https://drive.google.com/file/d/1WM-tYNaqFkrYOTb9x2Y4tE2VfKgGMAPL/view
8 What is Back to the Future Really About Part 5 - Project Bluebird, Mengele and Die Glocke Full HD
https://drive.google.com/file/d/1-cmT6jQJfm2IaDE3E84XhN33E5X4tQ-R/view
9 What is Back to the Future Really About Part 6 Neo-Nazi Racism Encoded in the Time and Speed Full HD
https://drive.google.com/file/d/1LkT3PnmKvnQ6AD-ksT3gEOBAdOtr7_Ij/view
10 What is Back to the Future Really About - Part 7 - Secret of the Flux Capacitor & Buckaroo Bansai Full HD
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https://drive.google.com/file/d/1aP1AUFHwZOebCcFP3FXJ-IFRuJj6Y-IN/view?usp=sharing
3 Murdered by the monarchs
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4 The Illuminati Murdered by the Monarchs Part 1
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5 The Illuminati Murdered by the Monarchs Part 2
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6 Illuminati Vol 3 - Murdered by the Monarchy Part 3
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https://drive.google.com/file/d/14kBasy4dTXAXQJ4lbyuQt8-uAzcfQTIC/view?usp=sharing
Dave Chappelle's Cousin Said He Was Killed And Cloned- This Is Her Story (718p_30fps_H264-192kbit_AAC).mp4
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2 INTERVIEW WITH RABBI ABE FINKELSTEIN
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2 🍕 #PizzaGate 🤔🍕 #PedoGate😠The UnAnswered Questions Documentary - Part 1 https://drive.google.com/file/d/10u97vR5JJVR6q0nmKQg36ab61iDo4NEn/view?usp=sharing
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4 🍕 #PizzaGate 🤔🍕 #PedoGate😠The UnAnswered Questions Documentary - Part 3 https://drive.google.com/file/d/1oKIvXumwtpcIPxb_h6VEvkQ5liTZbwXz/view?usp=sharing
5 MY MOST IMPORTANT VIDEO! BARACK OBAMA'S, HILLARY CLINTON'S CHILD TORTURE CULT SOROS, UNTHANKABLE IN PLAIN SIGHT, COMITPIZZAGATE!
https://drive.google.com/file/d/1tqMHMOnSkkHgojbE2uvWsuJNgHSYmE9k/view?usp=sharing
6 🍕 #Pizzagate is Real - Tearing Away the Veil
https://drive.google.com/file/d/17IAw9FP5OGnsQLGFx-SJxVHxiUTxcA8b/view?usp=sharing
7 The Kinsey Syndrome How and Why Pizza became Pedophilia Pizzagate-HQ

https://drive.google.com/file/d/1-T6Da0fjzaOwaIzxC28TKW66nB_wSgq8/view?usp=sharing
8 🍕 #They are eating the children!😠Pizza Gate! Plymouth Fury
https://drive.google.com/file/d/1n5HxfZZx5_3xkO2VwamN1wXxADnUZPD1/view?usp=sharing
9 🍕 #This Pizza Gate Shit has really gotten totally outer limits, superstars we know doing this madness- HD
https://drive.google.com/file/d/1dMq6knz53yBDeCpLPXxj8BHuUq88P_En/view?usp=sharing

31 PIZZAGATE videos

🍕 #PizzaGate😠Part 1🤔Madeleine McCann Disappearance (HD)
https://drive.google.com/file/d/1WY3A_3H2jyr9HRcztZ9gsimxtBpxMid0/view?usp=sharing
🍕 #PizzaGate😠Part 2🤔ACORN Controversy (HD)
https://drive.google.com/file/d/1ya8DiN4SxINJBb6FTIosnNDfPL0YjKFH/view?usp=sharing
🍕 #PizzaGate😠Part 3🤔Obama's Close Ties to ACORN (HD)
https://drive.google.com/file/d/1e9lPqMGBJzRX9v90qdAZbfiQ6SHT6SMz/view?usp=sharing
🍕 #PizzaGate😠Part 4🤔McCann Podesta Connection (Debunking Snopes and New York Times) (HD)
https://drive.google.com/file/d/1QytF1zt2n0qDEHemnI4HFaYMub6Yqoge/view?usp=sharing
🍕 #PizzaGate😠Part 5🤔Madeleine McCann Case Gaspar Statements (HD)
https://drive.google.com/file/d/1LAme7IsYr5_JV3WcbhzoxNotSkBwv1NZ/view?usp=sharing
🍕 #PizzaGate😠Part 6🤔McCann Case Yvonne Martin Statements (HD)
https://drive.google.com/file/d/1a9kja6_1jUu12ZFtkE-Vw1lil_D7usbX/view?usp=sharing
🍕 #PizzaGate😠Part 7🤔McCann Podesta Conspiracy Theories ADVICE (HD)
https://drive.google.com/file/d/1TTQwxeqlmKHUwW4qZel_w9qfRiaU_Gt3/view?usp=sharing
🍕 #PizzaGate😠Part 8🤔Madeleine McCann Case Clement Freud (HD)
https://drive.google.com/file/d/1G1mryNwbY1OTXf1ziEFjQ9-bTNftCnC_/view?usp=sharing
🍕 #PizzaGate😠Part 9🤔McCann Case What Did Clement Freud Know About Madeleine (HD)
https://drive.google.com/file/d/1jaipMf6-4b4pys8EkXOGOeZTw5XA-Cgd/view?usp=sharing
🍕 #PizzaGate😠Part 10🤔Kate McCann's Bizarre Book Madeleine (HD)
https://drive.google.com/file/d/1QFsXkQZ3k4mVKimoT_5v3gqWXSDMO8yO/view?usp=sharing
🍕 #PizzaGate😠Part 11🤔Fake News, Search Trends, Jeff Sessions, #NationalPizzaDay, and MORE (HD)
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🍕 #PizzaGate😠Part 12🤔FBI Pedophile Logos and Symbols (HD)
https://drive.google.com/file/d/1fgrWJjfzS38yGcqsJww3FDBeODoVaR6O/view?usp=sharing
🍕 #PizzaGate😠Part 13🤔NY Times 2005 Pedophilia Investigation + Catherine Agnew + MORE (HD)
https://drive.google.com/file/d/13cfQpw_042waWOGRs9BVK6JAw78x4-8c/view?usp=sharing

🍕 #PizzaGate😠Part 14🤔NY Times 2005 Pedophilia Investigation Justin Berry + Milo + Ted Heath + MORE (HD)

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🍕 #PizzaGate😠Part 15🤔Kurt Eichenwald and Justin Berry + Censorship + #CNNLeaks + MORE (HD)

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🍕 #PizzaGate😠Part 16🤔Alex Jones vs. Bill Clinton (HD)

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🍕 #PizzaGate😠Part 17🤔Kurt Eichenwald vs Bill Moran + Censorship + Cernovich %2F Epstein Lawsuit (HD)

https://drive.google.com/file/d/16a82kfhe0WM56fMzCSjGSirGM_J6Xsmm/view?usp=sharing

🍕 #PizzaGate😠Part 18🤔#Vault7 #YearZero & Pedophile Blackmail & Ken Livingstone (HD)

https://drive.google.com/file/d/1jOEGUXyZrUbdFSw0wez-Ah1_uMBLw60F/view?usp=sharing

🍕 #PizzaGate😠Part 19🤔Memetics Meme Warfare + March 25th Washington DC Protest (HD)

https://drive.google.com/file/d/1wjx_na9hozRT0HUHZk6WH4cXaUF9gmo0/view?usp=sharing

🍕 #PizzaGate😠Part 20🤔BLogo & LBLogo Origins + Alex Jones Apology + Dr. Phil + Trudeau Foundation (HD)

https://drive.google.com/file/d/1jgXmkyt6NXyNZdhHdR1S8V1hnr9VydTX/view?usp=sharing

🍕 #PizzaGate😠Part 21🤔GLogo Origins + YouTube Censorship + Craig Sawyer + April 7th NYC Protest (HD)

https://drive.google.com/file/d/1bUkYpcSbasDO8UWR6WBsJuLctIbZYFcX/view?usp=sharing

🍕 #PizzaGate😠Part 22🤔CLogo Origins + Google Censorship + Haiti UN Trafficking + MORE Censorship (HD)

https://drive.google.com/file/d/1wMvv15ABx2VYZdzbsskfY5K6CDiqPuam/view?usp=sharing

🍕 #PizzaGate😠Part 23🤔Pedophilia Activism & Normalization + Ronald Bernard + Macron + Bill Nye + MORE (HD)

https://drive.google.com/file/d/1ymhP7HFlE69oQlSJH7CVe0-PIHrL8Xkj/view?usp=sharing

🍕 #PizzaGate😠Part 24🤔Misleading ‘PizzaGate’ vs. ‘Fake News’ Google Search Trends + Gematria (HD)

https://drive.google.com/file/d/1WIvLdnRXDI6BTGLrXXim3Yh9YU_DpzFP/view?usp=sharing

🍕 #PizzaGate😠Part 25🤔Madeleine McCann Case Brenda Leyland Twitter 'Troll' PsyOp! + #SethRich (HD)

https://drive.google.com/file/d/1d78daPUgzGNAEqISmN5Iqm9hoKbBWs_j/view?usp=sharing

🍕 #PizzaGate😠Part 26🤔Is David Brock Controlled by Hillary Clinton + David Seaman Contest (HD)

https://drive.google.com/file/d/1z4LiP66ble6vGy2hCYZRk0WjKhUYO9ix/view?usp=sharing

🍕 #PizzaGate😠Part 27🤔Was #SpiritCooking Too Much For Kanye West + Marina Abramovic + Katy Perry (HD)

https://drive.google.com/file/d/1UoDZna-VPwblpPvo4XV6Kby1O99H8lKH/view?usp=sharing
🍕 #PizzaGate😠Part 28🤔David Brock Blackmail Scandal + Baphomet, United Nations, #ElsaGate + MORE (HD)
https://drive.google.com/file/d/1S4qfqk5e9b8sjvKq9-XETTo-ft_SO747/view?usp=sharing
🍕 #PizzaGate😠Part 29🤔Pool Entertainment Luzzatto Email + WikiLeaks + 911 + MORE (HD)
https://drive.google.com/file/d/1kTxsea0Om_ve8dU09RCzSrRCcF7MqQ-H/view?usp=sharing
🍕 #PizzaGate😠Part 30🤔Madeleine McCann Case Goes Right to the Top! + Halligan PsyOp + Podesta Efits (HD)
https://drive.google.com/file/d/1LxSqriooHEzpYoN5yQYrpi4_gGoXl0IW/view?usp=sharing
🍕 #PizzaGate😠Part 31🤔Hollywood Victims Speak Out! #PedoWood + Weinstein + Mind Control (HD)
https://drive.google.com/file/d/12SoeTD8Xwv6m7Ex1BLaKCBQwej4hEkZq/view?usp=sharing

1 video

The Finders Secret CIA's child abduction operation.mp4
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1 video Satanic Vatican

Satanic Vatican
https://drive.google.com/file/d/1iNbDh7JgZ9D_RMHwf_rQ0-qNL73JgQXW/view?usp=sharing

1 video

The Whore of Revelation 17 Identified_ Bible Prophecy Fulfilled. Antichrist is Here!.mp4
https://drive.google.com/file/d/1jK_2N4kQ3dpeGYI-bHk0oDhaevf9-hTC/view?usp=sharing

How the Vatican created Islam. The astonishing story from an ex-Jesuit priest, Alberto Rivera, which was told to him by Cardinal Bea while he was at the Vatican..mp4
https://drive.google.com/file/d/1CRIRJmTBk2mAcunVrnfSWDebmLO9U38B/view?usp=sharing

64 videos Satanic Vatican

Satanic Vatican P 1 The Whore of Babylon
https://drive.google.com/file/d/13FA3X6vTSGqSYf2NP1tksb4VnLzRxJZQ/view?usp=sharing
Satanic Vatican P 2 The Babylonian Whore
https://drive.google.com/file/d/1BzSbpXTK5mP0TbRpdjMDnh-c_MW51IsX/view?usp=sharing

Satanic Vatican P 3 All Faiths Prayer to Satan
https://drive.google.com/file/d/1F5JJKeilizQ6GZF9--7aj_f-4v6dxV2B/view?usp=sharing
Satanic Vatican P 4 The Impostor Pope
https://drive.google.com/file/d/1f8Ijiq_eULbDcaKkbhQ-jpgAntQL62IR/view?usp=sharing
Satanic Vatican P 5 The Smiling Pope
https://drive.google.com/file/d/1xX4_4dzDUeVxYEn21PJElXt1HWzPwGq6/view?usp=sharing
Satanic Vatican P 6 The Antichrist Pope
https://drive.google.com/file/d/1eaNDcWsjbjWwB9BT-cErqqMZ7EPHV05u/view?usp=sharing
Satanic Vatican P 7 Pope John Paul II
https://drive.google.com/file/d/1Qazd7tiO1OnQ0ubMtKMtQVa_urXYVNwu/view?usp=sharing
Satanic Vatican P 8 Raise Pope John Paul II from the Dead
https://drive.google.com/file/d/1A79AlQkRBra-W-5VuDT85GnCFnEOH9j1/view?usp=sharing
Satanic Vatican P 9 The book of Revelations
https://drive.google.com/file/d/1Qhzx-8bSmYNBGn57hY5QmO2JzBb_8kR5/view?usp=sharing
Satanic Vatican P 10 Counterfeit Bibles of Vatican
https://drive.google.com/file/d/1do3Lc2LPt5cUvuUSKB1uNLEMKfGrD9Il/view?usp=sharing
Satanic Vatican P 11 AntiChrist Pope s 7 year Covenant is Not a Peace Treaty
https://drive.google.com/file/d/1mbj-8CpC789cgtN4Ti5vCEy--3U5D9XN/view?usp=sharing
Satanic Vatican P 12 Vatican Exorcism
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Satanic Vatican P 13 The Vatican Archives
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Satanic Vatican P 15 Vatican Your Mortgage
https://drive.google.com/file/d/1bzOR1sw9Gu00anhXCM3VYJxP9Zx7riZb/view?usp=sharing
Satanic Vatican P 16 The BLACK Pope A
https://drive.google.com/file/d/1PkW-3vzSX1ArYDPceJkixNv9-qGcnpwN/view?usp=sharing
Satanic Vatican P 17 The Black Pope B
https://drive.google.com/file/d/1KozSRmku5gjrSmknFefifnixATG0HEFm/view?usp=sharing
Satanic Vatican Part 18 Confessions of Ex
Jesuit A
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Satanic Vatican P 19 Confessions of Ex Jesuit B
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Satanic Vatican P 20 Confessions of Ex Jesuit C
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Satanic Vatican P 21 Confessions of ex Jesuit D

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Satanic Vatican P 24 The Black Mass
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Satanic Vatican P 25 The Great Prostitute
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Satanic Vatican P 26 New World Order
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Satanic Vatican P 27 The Popes Temple Mount
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https://drive.google.com/file/d/1wX-Vl0tB787e2wg3qEZ-qPZh0-uq6rcT/view?usp=sharing
Satanic Vatican P 32 illuminati Jesuits Control The World B
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Satanic Vatican P 33 illuminati Jesuits Control The World C
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Satanic Vatican P 34 illuminati Jesuits Control The World D
https://drive.google.com/file/d/1MAcJg1qdGvcl-j3NFNO4XfBWwtVQ6qSV/view?usp=sharing
Satanic Vatican P 35 illuminati Jesuits Control The World
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Satanic Vatican P 36 Satanic History
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Satanic Vatican P 39 The Vatican Planet X
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Satanic Vatican P 40 Catholic Nazi

Collaboration
https://drive.google.com/file/d/1KslT2TEA4UelI8OeV1idWIWOmPYaxPRd/view?usp=sharing
Satanic Vatican(P-41),How To Know If Your Church Group is Fake!(A Cult)
https://drive.google.com/file/d/1XGBJMjKQwnTcHtMzL75Utl3QxLMAOmx0/view?usp=sharing
Satanic Vatican P 42a Catholics Rewrite The 10 Commandments
https://drive.google.com/file/d/1l-WQB8WzuuMY_aES9Kp7We7lRpEkvl7s/view?usp=sharing
Satanic Vatican(P-43),Priests,Monks & Nuns Of Babylon A
https://drive.google.com/file/d/1zOXNCeJbJ_ALCdEetoxPYwuXHFZ5oEJr/view?usp=sharing
Satanic Vatican P 44 Priests Monks Nuns Of Babylon B
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Satanic Vatican(P-45),The Hiroshima
https://drive.google.com/file/d/1_ugG6RerXd3Vv5KxVL_9G-ySCYZ77LIM/view?usp=sharing
Satanic Vatican P 46 The Grimoire of Honorius
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Satanic Vatican P 47 Catholic Church Great Prostitute of Revelation A
https://drive.google.com/file/d/1_YZs5frJiEP8GuB1Rl4-tuX5wNiKIzwe/view?usp=sharing
Satanic Vatican P 48 Great Prostitute of Revelation
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Satanic Vatican P 49 Pope Benedict Quits Bible Prophecy being fulfilled
https://drive.google.com/file/d/1a0okdDOTcrlj0gCMTUP2weTCXHDxR5g4/view?usp=sharing
Satanic Vatican(P-50),Pope Benedict linked to Nazi's & Knights Templar
https://drive.google.com/file/d/1u5G5NY8HkwGqOXXOUAGukyMzPaaw16sA/view?usp=sharing
Satanic Vatican(P-51),ISIS is the Catholic goddess Mary!
https://drive.google.com/file/d/1h6Q7gw-97F49Q0_dM32I8Ezum6ftezlP/view?usp=sharing
Satanic Vatican(P-52),Nazi's & Fascists Founded The EU!
https://drive.google.com/file/d/1WJsnDqWQkLlv1quV7iZwgiPCiUlWNvPW/view?usp=sharing
Satanic Vatican P 53 Book of Revelation is Happening Now
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Satanic Vatican(P-54),Vatican's Agenda for Jerusalem
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Satanic Vatican(P-55),Black Pope Francis Denigrates Jews
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Satanic Vatican(P-56),Pope Blasphemes Jesus
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Satanic Vatican(P-57),The Days of 666
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Satanic Vatican(P-58),One World Religion
https://drive.google.com/file/d/1R8GJEmWlkDDPmn0Sq7aZqr4HqjCwjMZA/view?usp=sharing

Satanic Vatican P 59 Islam Catholic Connection
https://drive.google.com/file/d/1rTZVKoDE94FCErYYnZ8rgZxAOBuGeurU/view?usp=sharing
Satanic Vatican(P-60),Wars of Antichrist and the False Messiah
https://drive.google.com/file/d/1Y9bdzcTpCwEnXm65qnwgiVwsTgY5Uve-/view?usp=sharing
Satanic Vatican(P-61),Pope Francis False Prophet of Revelation
https://drive.google.com/file/d/14EARrXzJGMzWNYbmbd8sHtQ3dNaKRTyq/view?usp=sharing
Satanic Vatican P 62 Pope Francis Says Jesus Was a Failure
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Satanic Vatican p 63 Owner of World s Biggest Banks and Top Global Companies Exposed[360]
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Satanic Vatican(P-64),Ex-Catholic Nun Exposes Catholicism's Darkest Secrets
https://drive.google.com/file/d/1cpN6onljuQFWfUdMBhU_CT9_8-LYPfn5/view?usp=sharing

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1 CRICKETS DEFY SCIENTIFIC LAW SONIC FREQUENCY ATTACK A Whale of a Chem-Tale. EMF-Radiation-Mutation.mp4
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https://drive.google.com/file/d/1h9DU5kNrKLIjtGOi-M9RqUdXJ5kgxdxe/view?usp=sharing
3 (annotate) LET'S END THIS! Chemtrail-Orbs Electric-Sky, Dancing Sun/Moon, Ludicrous Archon Mind-Game.mp4
https://drive.google.com/file/d/1-CF6kz9XT2MDw0NWN9w4I3neKqHQxxr4/view?usp=sharing
4 SCIENCE & PHYSICS OF LIQUID CRYSTAL IRRADIATION - MIND GAME put on by electromagnetic ARCHONS.mp4
https://drive.google.com/file/d/175TppiWKuYnuIddN0sawwT1dtdMKj0Mk/view?usp=sharing
5 "SUPERSUN" WHY CELESTIAL BODIES ARE BRIGHTER THAN EVER LIQUID CRYSTALS MAGNIFYING EMF's RADIATION.mp4
https://drive.google.com/file/d/1sqomyhVrMdkKEV0pI-MJ0MP2jcUpRagd/view?usp=sharing
6 DANCING MOON & SUN!! UFO/ORB's, HOLOGRAMS, LIQUID CRYSTALS, MILITARY, SACRED GEOMETRY & PHYSICS!.mp4
Keith Thompson Zeitgeist New Age Exposed.mp4
https://drive.google.com/file/d/168NRne5GyMD6ZUz1XzfgWGr8vADRX5J3/view?usp=sharing
7 EVERYTHING IS SOUND - ARCHON MIND-GAME overcome by HUMAN HEART THINK--BELIEVE--CREATE.mp4
https://drive.google.com/file/d/15XNp7hYnf9W_ucg1XpcGUvVbXni84uQE/view?usp=sharing
8 WHAT IS GOING ON IN OUR WORLD! Chemtrails, liquid crystals, EMF, orbs ARCHON MIND

PARASITES.mp4
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9 100% INDICATION HOLOGRAPHIC "SUPERMOON" w/ "DEMONIC" stationary clouds ARCHON HOLOGRAMS.mp4
https://drive.google.com/file/d/1P0iTz0ZYugHyKFnxk12kK0f9NWg6s1-w/view?usp=sharing
10 URGENT Electromagnetic "Mind-Parasites" the Gnostics dubbed ARCHONS dousing skies w/ LIQUID CRYSTALS.mp4
https://drive.google.com/file/d/1a9TGJTgVmSgh6-nagrPLmN5DbRd-m7Yq/view?usp=sharing
11 DAZZLING ARCHON ELECTROMAGNETIC ORB - HEXAGON this time with "juggling balls" so perhaps it's a male.mp4
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12 THE INCREDIBLE DANCING MOON (illusory) ORB holographic projection LIQUID CRYSTALS.mp4
https://drive.google.com/file/d/1cxIPOH8XhWyOKK2FbUrdVWgbAol9jMsM/view?usp=sharing
13 BIG ORB, LITTLE ORB, what's that overhead? Electromagnetic beings called ARCHONS the Gnostics said
https://drive.google.com/file/d/1ltIy8FscWTjWNvdw54u9slLdoKDjvO_R/view?usp=sharing
14 POWER OF OUR HEARTS - ARCHON MIND-GAME manipulating our BELIEFS to CREATE an "inhuman" world.mp4
https://drive.google.com/file/d/1imoliW0Z4lQj-EvE5nBfUdL9jj1aXoCq/view?usp=sharing
15 DEMONSTRATION of HOLOGRAPHIC CAPABILITY via LIQUID CRYSTALS; Archon/Reptilian MIND GAME.mp4
https://drive.google.com/file/d/1I1g7OPGjgdDZPNY-kUEqvmADTw3lIHzi/view?usp=sharing
16 POWER OF BELIEF & HEARTS TO CREATE! ARCHON electromagnetic MIND-GAME & manupulation of TIME
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1 video

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2 AGE OF DECEIT 2 FULL Alchemy and the Rise of the Beast Image
https://drive.google.com/file/d/1QnbFIj9E2lx24I08QuokznNgaNziQrkz/view?usp=sharing
3 Age Of Deceit 3 Part 1 This is How Satanism Will Go MainStream! - Kawaii Demons (HD)

https://drive.google.com/file/d/1p04NIx4sVv7EnGEKHe22mQxYQm6O6lzP/view?usp=sharing
4 AGE OF DECEIT 3 Part 2 FULL Remnants in the Cyber_Hive Earth[720]
https://drive.google.com/file/d/1xnTw6naM-90x_QN7JE3Abfl6BF-HjBrD/view?usp=sharing
5 Aquarius The Age of EVIL
https://drive.google.com/file/d/1SH9M-2Oe5YM_9_t8FlobJ_RRBbHXTGLs/view?usp=sharing
6 Exposing The Satanic Empire Final Cut

7 EXTERNALIZING THE HIERARCHY Illuminati Documentary
https://drive.google.com/file/d/17jhiQsGeQTHeKJRzvbnpgKQsdIoWtc7M/view?usp=sharing
8 Zeitgeist REFUTED DEBUNKED Religious Portion
https://drive.google.com/file/d/1nqe1VXcsr9bQXpHImDbSfB4cqw6ycqvV/view?usp=sharing
9 Zeitgeist The Movie Refuted PointbyPoint
https://drive.google.com/file/d/1K_x6tj5TZNI8siJOW1lY5avLSe7R_PUe/view?usp=sharing
10 The New Age Infiltration of the Truth Movement-HQ
https://drive.google.com/file/d/1G4WMCmbwNKBXS63gW7xqWIy7hSNASZV6/view?usp=sharing
11 Snippet of Truth-Alice Bailey 10 Point Plan
https://drive.google.com/file/d/1cOZzjL4I8IdO-tPTqYUSObFYnAx66kIO/view?usp=sharing
12 Documentary - Defense of Apostle Paul Refuting Muslim Objections (HD)
https://drive.google.com/file/d/1dhgARTnp-eYUvdKKbDUSrTMAAuBmdf6T/view?usp=sharing
13 Detailed Documentary Exposing Catholic Church (8 hrs)
https://drive.google.com/file/d/1ZW8Hh55TSoSeaCZDnSlQITwKrAVGkQq1/view?usp=sharing
14 Documentary Purgatory Debunked (HD)
https://drive.google.com/file/d/1dLuSKlgzeEj4M-itvNq2paAL2EU8jXaa/view?usp=sharing
15 Joel Osteen Origins & Errors of His Teaching (a Film by Keith Thompson)-HD
https://drive.google.com/file/d/1d19-fUQDSyu_3lp9LmaiQCT4AgiPYfIs/view?usp=sharing
16 Word of Faith Teachers Origins & Errors of their Teaching (documentary)-HD
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17 Documentary Atheists Don t Exist[720]
https://drive.google.com/file/d/1N-eB5gJ7aW4yFVpVQIblCAIR3vWYFUMV/view?usp=sharing
18 ISLAM FALSE RELIGION EXPOSED Documentary Sword and the Crescent Full
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19 Documentary Black Hebrew Israelites Debunked (HD)
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Destiny Lab
Triple Album 1st Half

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MP3
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4 videos

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https://drive.google.com/file/d/1n5u5_UjnIQJlOJQu1I-NMC1oKRZ5cMlo/view?usp=sharing
Unmask the Khazarian Mafia #history #education #documentary.mp4
https://drive.google.com/file/d/1Ig04dnH3l60Jz5KykOdDwGbEV22Er0j7/view?usp=sharing
The Secret History of The Khazarian Mafia.mp4
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Midnight Think Tank ~ Hidden History of the Incredibly Evil Khazarian Mafia.mp4
https://drive.google.com/file/d/1W-uzrt3hloIiWN21e1U_Es1yi9AeMZk1/view?usp=sharing

1 Royals Hunting Children For Sport[720].mp4
https://drive.google.com/file/d/1x_duTPdVeMD4Wl0DPTwwsvC7vB8qJaRg/view?usp=sharing
2 Royals Hunting Children For Sport Part II[720].mp4
https://drive.google.com/file/d/1DeRXUgCLmE-h542ExKrU8YNWVPeFfUi6/view?usp=sharing
Royals Hunting Children For Sport Part III PII better Audio Pope Bergoglio and the Dutch Royals[720].mp4
https://drive.google.com/file/d/1K8q9TriW3tRnp_UOwu7OBXoQevG_kHdM/view?usp=sharing
60 Minutes Exposing The Truth About Boystown - Breaking the Silence (480p)
https://drive.google.com/file/d/1GzqjuNZiTueIT0g_RWhS34yKiLVVOZ6s/view?usp=sharing
BBC Correspondent - Dutroux Paedophile Scandal, Belgian X Files Olenka Frenkiel (2002) (480p)
https://drive.google.com/file/d/102flBJoWhsopbzcsvBNS6BaUQL_YybP9/view?usp=sharing
Belgium's X-Files - An Olenka Frenkiel Investigation (360p)
https://drive.google.com/file/d/1RyT-BANSVKUreOkfkuhHoOOQcz_8KMui/view?usp=sharing

Correspondent Belgium's X Files An Olenka Frenkiel Investigation Part 1 (480p)
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Correspondent Belgium's X Files An Olenka Frenkiel investigation Part 2 (360p)
https://drive.google.com/file/d/1rtKMBPYVG8YtTFoKDDPOPSVRoQlsvllh/view?usp=sharing
Correspondent Belgium's X Files An Olenka Frenkiel investigation Part 3 (360p)
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Chateau des Amerois (480p)
https://drive.google.com/file/d/17VpKX5h6SIzXqaJ44oJWo0H4w2vG7cE8/view?usp=sharing
CONSPIRACY OF SILENCE [Banned Discovery Channel Documentary] (360p)
https://drive.google.com/file/d/1Nanl2rZfEfTUouBEVR_CthlaC6oCEWS8/view?usp=sharing
David Shurter - Satanic Ritual Abuse and MKUltra Survivor (480p)
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Decades of Satanic Abuse - LISTEN TO THE CHILDREN Pt 1 (480p)
https://drive.google.com/file/d/1WPj99Ezx1ZssdN947DHMYB_6W8zl0okY/view?usp=sharing
Decades of Satanic Abuse - LISTEN TO THE CHILDREN Pt 2 (480p)
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Elite Child Sex Slaves 1981 Forgotten Documentary (360p)
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Ex FBI Head Ted Gunderson Satanic McMartin Preschool Tunnels Pt 1 (360p)
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Ex FBI Head Ted Gunderson Satanic McMartin Preschool Tunnels Pt 2 (360p)
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Satanism and the CIA: International Trafficking in Children.mp4
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Fiona Barnett - Satanic Pedophile Network Exposed (480p)
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Fiona Barnett - The Candy Girl Documentary (480p)
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Fritz Springmeier Revealed Ritual Belgium Castle.mp4 (360p)
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GEOFFREY DICKENS MP ON SATANIC RITUAL ABUSE BABIES MURDERED (360p)
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Child meat @ SOME McDonald's.pdf
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Hampstead pedophilia the UK High Court excluded (480p)
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Hampstead Christ Church Satanic Ritual Child Abuse Cover up Police testimony of Child 1 reupload

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Hampstead Christ Church Satanic Cult I Cover up Police testimony of Child 2 [360]

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Hampstead Cover Up Interview With Ella Abe The Sodomite Death Cult[720]

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HAMPSTEAD COVER UP on World Beyond Belief with Ella and Abraham[720]

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Hampstead UK Satanic Sex Abuse Kids - New Interview with Mother and Boyfriend - Nov 2015 (480p)

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Hampstead Cover Up Alisa Gabriel s Retractions Pedogate[720]

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Part I Ella Draper & Abe Christie's testimony on Hampstead pedophilia the UK High Court excluded (480p)

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Horror Chateau Sautou in Sedan, France (480p).mp4

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Illuminati Leaked Footage from a Secret Ritual (360p)

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International Ritual Child Sacrifice, Torture and Trafficking (360p)

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Johnny Gosch Abduction - Disturbing Interview from 2005 - Elite's pedophile playground (360p)

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Mothers of Darkness Castle in Belgium (480p).mp4

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Paedophile child-killer Marc Dutroux - Monster of Belgium (356p)

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CIA Satanism Ritual Child Abuse Ted Gunderson The Best Documentary Ever[720] https://drive.google.com/file/d/1vPZdVgbGNglU13P4vL6_PHHrvPtve44a/view?usp=sharing

Illuminati Satanic MK Ultra Mind Control Victim Arizona Wilder[720]

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Illuminati Satanic MK Ultra Mind Control Victim Brice Taylor[720]

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MK ULTRA Project Monarch[720]

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MKUltra Monarch Mind Control Disclosure Secrets Confessions WHISTLE BLOWER[720] https://drive.google.com/file/d/1YNtTRxPBfadKja2WLH3AOGnxllL2PSIH/view?usp=sharing
SHOCKING CIA MKULTRA MONARCH MIND CONTROL WHISTLEBLOWER TELLS ALL[720] https://drive.google.com/file/d/15BccN5h3vrVLNAggr55Mz5SUzWpGXyye/view?usp=sharing
MK Ultra Franklin Scandal Deposition of Paul Bonacci[720]
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Monarch Mind Control Victim Paul Bonacci Debriefing Part 1 of 2[720]
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Monarch Mind Control Victim Paul Bonacci Debriefing Part 2 of 2[720]
https://drive.google.com/file/d/1naDVqHzNpyeXzBf4I3QqOfIaWPfZy3MY/view?usp=sharing
Paul Bonacci Was at the Formation of N A M B L A in 1978 Interview w Ted Gunderson 93[720]
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T moignage de Paul Bonacci par Gary Caradori Affaire Franklin cover up Snuff film Bohemian Grove[720]
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Paul Bonacci dans l affaire Monarch The Franklin Cover Up[720]
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Paul Bonacci Arrives At Bohemian Grove summer 1985 part 3 wsubtitles (360p)
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Ritual child abuse in France - German documentary pt. 1-5 (480p)
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https://drive.google.com/file/d/10i4CVnj6t46OhVOkJbCuzYkmo4mhh27h/view?usp=sharing
Ritual child abuse in France - German documentary pt. 3-5 (480p)
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Ritual child abuse in France - German documentary pt. 4-5 (480p)
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Ritual child abuse in France - German documentary pt. 5-5 (480p)
https://drive.google.com/file/d/1F43YCNIiO3C3y0kQYEB4fp6OsOLNt973/view?usp=sharing
Satanic Ritual Abuse Report Similar to Hampstead (360p)
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Satanism Within the Elite Part 1 (480p).mp4
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Satanism Within the Elite Part 2 (480p).mp4
https://drive.google.com/file/d/13jV1l689i4A81gBR7YLaXR71hs2I90aJ/view?usp=sharing
Satanism Within the Elite Part 3 (480p).mp4
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Sun Sea & Satan (480p).mp4
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Survivors of Irish church child abuse speak out (360p)
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Two Brave Guys Try to Infiltrate Mothers of Darkness Castle in Belgium (480p)
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The Children of Table 34 complete film[720]
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3 Doc Marquis The Arrival of AntiChrist Part 2/2
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4 The Arrival of the Antichrist.mp4
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7 Frontmen 1-Title1.avi
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8 Frontmen 2-Title1.avi
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10 The History Of Masonry And The Illuminati By Doc Marquis part 1

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15 The Illuminati Protocols of Zion Part 1 of 2[72
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16 The Illuminati Protocols of Zion Part 2 of 2[72
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17 The Protocols of the Learned Elders of Zion - Full Audiobook
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18 The Protocols of the Learned Elders of Zion mp3
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29 ILLUMINATI PLANS 2015 - To Kill Billion People

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30 Illuminati in the Industry 2015_ Satanic New World Order Agenda Exposed
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31 The Illuminati know what is coming September 22
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34 The Illuminati know what is coming September 22
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35 THE YEAR OF LUCIFER OPENING THE IXXI DOOR Septe
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JOHN F. KENNEDY

35th President of the United States: 1961 - 1963

Address Accepting the Democratic Nomination for President at the Memorial Coliseum in Los Angeles, California

July 15, 1960

Governor Stevenson, Senator Johnson, Mr. Butler, Senator Symington, Senator Humphrey, Speaker Rayburn, fellow Democrats: I want to express my thanks to Governor Stevenson for his generous and heart-warming introduction.

It was my great honor to place his name in nomination at the 1956 Democratic Convention and I am delighted to have his support and his counsel and his advice in the coming months ahead.

Let me say first that I accept the nomination of the Democratic party. I accept it without reservation and with only one obligation—the obligation to devote every effort of my mind and spirit to lead our party back to victory and our nation to greatness.

I am grateful, too, that you have provided us with such a strong platform to stand on and to run on. Pledges which are made so eloquently are made to be kept. "The rights of man"—the civil and economic rights essential to the human dignity of all men—are indeed our goal and are indeed our first principle. This is a platform on which I can run with enthusiasm and with conviction.

And I am grateful, finally, that I can rely in the coming months on many others—on a distinguished running-mate who brings unity and strength to our platform and our ticket, Lyndon Johnson—on one of the most articulate spokesmen of modern time, Adlai Stevenson—on a great fighter for our needs as a nation and a people, Stuart Symington—on my traveling companion in Wisconsin and West Virginia, Senator Hubert Humphrey—on Paul Butler, our devoted and courageous chairman—and on that fighting campaigner whose support I now welcome, President Harry Truman.

I feel a lot safer with all of them on my side. And I am proud of the contrast with our Republican competitors. For their ranks are so thin that not one challenger has dared to put his head up in the last twelve months.

I am fully aware of the fact that the Democratic party, by nominating someone of my faith, has taken on what many regard as a new and hazardous risk—new, at least, since 1928.

The Democratic party has once again placed its confidence In the American people, and in their ability to render a free and fair judgment and in my ability.

And you have, at the same time, placed your confidence in me, and in my ability to render a free, fair judgment—to uphold the Constitution and my oath of office—to reject any kind of religious pressure or obligation that might directly or indirectly interfere with my conduct of the Presidency in the national interest.

My record of fourteen years in supporting public education—supporting complete separation of church and state—and resisting pressure from sources of any kind should be clear by now to everyone.

I hope that no American—I hope that no American, considering the really critical issues facing this country, will waste his franchise and throw away his vote by voting either for me or against me solely because of my religious affiliation. It is not relevant.

I am telling you now what you are entitled to know: As I come before you seeking your support for the most powerful office in the free world, I am saying to you that my decisions on every public policy will be my own—as an American, a Democrat and as a free man.

I mention all of this only because this country faces so many serious challenges, so many great opportunities, so many burdensome responsibilities, that I hope it is to those great matters that we can address ourselves in the coming months.

And if this statement of mine makes it easier to concentrate on our nation's problems, then I'm glad that I have made it.

Under any circumstances, the victory we seek in November will not be easy. We know that in our hearts. We know that our opponents will invoke the name of Abraham Lincoln on behalf of their candidate—despite the fact that his political career has often seemed to show charity towards none and malice for all.

We know that it will not be easy to campaign against a man who has spoken and voted on every side of every issue. Mr. Nixon may feel that it's his turn now, after the New Deal and the Fair Deal—but before he deals, someone's going to cut the cards.

That "someone" may be the millions of Americans who voted for President Eisenhower but would balk at electing his successor. For just as historians tell us that Richard the First was not fit to fill the shoes of the bold Henry II—and that Richard Cromwell was not fit to wear the mantle of his uncle—they might add in future years that Richard Nixon did not measure up to the footsteps of Dwight D. Eisenhower.

Perhaps be could carry on the party policies—the policies of Nixon, and Benson, and Dirksen and Goldwater. But this nation cannot afford such a luxury. Perhaps we could afford a Coolidge following Harding. And perhaps we could afford a Pierce following Fillmore.

But after Buchanan this nation needed Lincoln—after Taft, we needed Wilson—and after Hoover we needed Franklin Roosevelt.

But we're not merely running against Mr. Nixon. Our task is not merely one of itemizing Republican failures. Nor is that wholly necessary. For the families forced from the farm do not need us to tell them of their plight. The unemployed miners and textile workers know that the decision is before them in November. The old people without medical care—the families without a decent home—the parents of children without a decent school—they all know that it's time for a change.

We are not here to curse the darkness. We are here to light a candle. As Winston Churchill said on taking office some twenty years ago: "If we open a quarrel between the present and the past, we shall be in danger of losing the future. "

Today our concern must be with that future. For the world is changing. The old era is ending. The old ways will not do.

Abroad, the balance of power is shifting. New and more terrible weapons are coming into use. One-third of the world may be free—but one-third is the victim of a cruel repression—and the other one-third is rocked by poverty and hunger and disease.

Communist influence has penetrated into Asia. It stands in the Middle East, and now festers some ninety miles off the coast of Florida. Friends have slipped into neutrality—and neutrals have slipped into hostility. As our keynoter reminded us, the President who began his career by going to Korea ends it by Staying away from Japan.

The world has been close to War before—but now man, who survived all previous threats to his existence, has taken into his mortal hands the power to exterminate his species seven times over.

Here at home, the future is equally revolutionary. The New Deal and the Fair Deal were bold measures for their generations—but now this is a new generation.

A technological output and explosion on the farm have led to an output explosion.

An urban population revolution has overcrowded our schools, and cluttered our cities, and crowded our slums.

A peaceful revolution for human rights—demanding an end to racial discrimination in all parts of our community life—has strained at the leashes imposed by a timid executive leadership.

It is time, in short, for a new generation of leadership.

All over the world, particularly in the newer nations, young men are coming to power—men who are not bound by the traditions of the past—men who are not blinded by the old fears and hates and rivalries—young men who can cast off the old slogans and the old delusions.

The Republican nominee, of course, is a young man. But his approach is as old as McKinley. His party is the party of the past—the party of memory. His speeches are generalities from Poor Richard's Almanac. Their platform, made up of old left-over Democratic planks, has the courage of our old convictions. Their pledge is to the status quo—and today there is no status quo.

For I stand here tonight facing west on what was once the last frontier. From the lands that stretch 3,000 miles behind us, the pioneers gave up their safety, their comfort, and sometimes their lives to build our new West.

They were not the captives of their own doubts, nor the prisoners or their own price tags. They were determined to make the new world strong and free—an example to the world to overcome its hazards and its hardships, to conquer the enemies that threatened from within and without.

Some would say that those struggles are all over—that all the horizons have been explored—that all the battles have been won—that there is no longer an American frontier.

But I trust that no one in this assemblage would agree with that sentiment. For the problems are not all solved and the battles are not all won. And we stand today on the edge of a new frontier—the frontier of the Nineteen Sixties; the frontier of unknown opportunities and perils; the frontier of unfulfilled hopes and unfilled threats

Woodrow Wilson's New Freedom promised our nation a new political and economic framework.

Franklin Roosevelt's New Deal promised security and succor to those in need. But the New Frontier of which I speak is not a set of promises—it is a set of challenges. It sums up not what I intend to offer to the American people, but what I intend to ask of them. It appeals to their pride. It appeals to our pride, not our security—it holds out the promise of more sacrifice instead of more security.

The New Frontier is here, whether we seek it or not. Beyond that frontier are uncharted areas of science and space, unsolved problems of peace end war, unconquered pockets of ignorance and prejudice, unanswered questions of poverty and surplus.

It would be easier to shrink from that New Frontier, to look to the safe mediocrity of the past, to be lulled by good intentions and high rhetoric—and those who prefer that course should not vote for me or the Democratic party.

But I believe that the times require imagination and courage and perseverance. I'm asking each of you to be pioneers toward that New Frontier. My call is to the young in heart, regardless of age—to the stout in spirit, regardless of party—to all who respond to the scriptural call: "Be strong and of good courage; be not afraid, neither be dismayed. "

For courage, not complacency, is our need today; leadership, not salesmanship. And the only valid test of leadership is the ability to lead, and lead vigorously. A tired nation, said David Lloyd George, is a Tory nation—and the United States today cannot afford to be either tired or Tory.

There may be those who wish to hear more—more promises to this group or that—more harsh rhetoric about the men in the Kremlin as a substitute for policy—more assurances of a golden future, where taxes are always low and the subsidies are always high. But my promises are in the platform that you have adopted. Our ends will not be won by rhetoric, and we can have faith in the future only if we have faith in ourselves.

For the harsh facts of the matter are that we stand at this frontier at a turning-point of history. We must prove all over again to a watching world as we sit on a most conspicuous stage whether this nation, conceived as it is with its freedom of choice, its breadth of opportunity, its range of alternatives, can compete with the single-minded advance of the Communist system.

Can a nation organized and governed such as ours endure? That is the real question. Have we the nerve and the will? Can we carry through in an age where we will witness not only new breakthroughs in weapons of destruction, but also a race for mastery of the sky and the rain, the ocean and the tides, the far side of space, and the inside of men's minds?

That is the question of the New Frontier. That is the choice that our nation must make—a choice that lies not merely between two men or two parties, but between the public interest and private comfort—between national greatness and national decline—between the fresh air of progress and the stale, dank atmosphere of "normalcy"—between dedication or mediocrity.

All mankind waits upon our decision. A whole world looks to see what we shall do. And we cannot fail that trust; and we cannot fail to try.

It has been a long road from the first snowy day in New Hampshire many months ago to this crowded convention city. Now begins another long journey, taking me into your cities and homes across the United States. Give me your help, and your hand, and your voice. Recall with me the words of Isaiah:

"They that wait upon the Lord shall renew their strength; they shall mount up with wings as eagles; they shall run, and not be weary."

As we face the coming great challenge, we too, shall wait upon the Lord and ask that He renew our strength. Then shall we be equal to the test. Then we shall not be weary. Then we shall prevail.

Thank you.

ADDRESS TO THE GREATER HOUSTON MINISTERIAL ASSOCIATION

JOHN F. KENNEDY

35th President of the United States: 1961 - 1963

Speech of Senator John F. Kennedy, Greater Houston Ministerial Association, Rice Hotel, Houston, TX

September 12, 1960

ANNOUNCER. From Houston's Rice Hotel, Senator John Kennedy is about to address a special meeting of the Greater Houston Ministerial Association to which he has been invited. During this telecast, Senator Kennedy will participate in an informal question and answer period. The telecast of this meeting is sponsored by the Kennedy-Johnson Texas Campaign Committee, and is being seen throughout Texas on a special 22-station network. The audience you are seeing is composed of clergymen of the Houston area who have been invited by the association.

Rev. Herbert Meza will introduce the Democratic presidential candidate. The meeting is about to be called to order by the president, Rev. George Reck.

Mr. RECK. May I call this special meeting of the Association of Ministers of Greater Houston to order. Let us stand for prayer.

God be merciful unto us and bless us and cause His face to shine upon us, that Thy way may be known upon earth. Thy saving health among all nations. God shall bless us and all the ends of the earth shall praise Him. With these words of the psalmist, we stand before Thee, O God, as our only Sovereign Lord. Forgive us, Good Lord, and show us Thy mercy. Let Thy grace rest upon our Nation and do not take our Gospel life from us, incline our ears to Thee and to Thy will and show us always the truth that makes and keeps men free, in the name of our Lord Jesus Christ we pray, amen.

We are very happy that so many of you ministers are present at this meeting. The treasurer of our association, Pastor E. S. Harrison, has wondered to me if some of you would not like to pay your dues for this time, this year which begins with September. I am sure that he will be in the lobby after this session, ready to shake your hands. [Laughter.]

We are very happy to see so many of you ministers present, and we want this to be a true meeting of the association, under the policy of your executive committee this year, we wish to have as guests for regular and special meetings as many personalities of note and reputation as possible. The purpose, of course, is to provide not only a good program, but to give knowledge and enlightenment to the spiritual leaders of our community. Thus, a similar invitation was extended by the association to Mr. Nixon. Please understand that this is not a political rally. This is a meeting of the association of ministers, and we rely upon your sense for good order, proper respect for the nominee to the highest office of our land, and good Christian behavior generally.

Our little mouse has grown into a lion of significance. This has not been our original intention, but things happen these ways. Nevertheless, the atmosphere will be informal here, an informal gathering of ministers, and may such atmosphere be maintained.

May I speak a welcome to all of you. I recognize at this time the Reverend Herbert Meza, vice president of the association, and our program chairman.

Mr. MEZA. This program this evening does not constitute an endorsement of either the speaker or the party which he represents. The program has been motivated by the religious issues in this campaign, issues that are not modern. There are some who insist that nothing has changed within the Roman Catholic Church and there are others who insist that nothing should change. The problem is not to deny the religious issue or to brand as intolerant those who raise it. The problem is to place it in proper perspective and to determine where the candidate stands in relationship to that perspective. The extremists on both sides have tended to dominate the debate.

Contrary to common propaganda, the South is not a hotbed of religious or racial intolerance. There are many honest minds that are raising honest questions. Many Catholics differ with us on many questions that are relevant to the welfare of our country.

The fact that the Senator is with us is to concede that a religious issue does exist. It is because that there are many serious minds decently raising questions that we have invited the speaker of the evening, and it is for that same reason that we have allowed this meeting to be broadcast to that end.

I should like to introduce, at this time, the Senator from Massachusetts and the candidate for President of the United States, Senator John F. Kennedy.

Senator KENNEDY. Reverend Meza, Reverend Reck, I'm grateful for your generous invitation to speak my views.

While the so-called religious issue is necessarily and properly the chief topic here tonight, I want to emphasize from the outset that we have far more critical issues to face in the 1960 election; the spread of Communist influence, until it now festers 90 miles off the coast of Florida - the humiliating treatment of our President and Vice President by those who no longer respect our power - the hungry children I saw in West Virginia, the old people who cannot pay their doctor bills, the families forced to give up their farms - an America with too many slums, with too few schools, and too late to the moon and outer space.

These are the real issues which should decide this campaign. And they are not religious issues - for war and hunger and ignorance and despair know no religious barriers.

But because I am a Catholic, and no Catholic has ever been elected President, the real issues in this campaign have been obscured - perhaps deliberately, in some quarters less responsible than this. So it is apparently necessary for me to state once again - not what kind of church I believe in, for that should be important only to me - but what kind of America I believe in.

I believe in an America where the separation of church and state is absolute - where no Catholic prelate would tell the President (should he be Catholic) how to act, and no Protestant minister would tell his parishioners for whom to vote - where no church or church school is granted any public funds or political preference - and where no man is denied public office merely because his religion differs from the President who might appoint him or the people who might elect him.

I believe in an America that is officially neither Catholic, Protestant nor Jewish - where no public official either requests or accepts instructions on public policy from the Pope, the National Council of Churches or any other ecclesiastical source - where no religious body seeks to impose its will directly or indirectly upon the general populace or the public acts of its officials - and where religious liberty is so indivisible that an act against one church is treated as an act against all.

For while this year it may be a Catholic against whom the finger of suspicion is pointed, in other years it has been, and may someday be again, a Jew - or a Quaker - or a Unitarian - or a Baptist. It was Virginia's harassment of Baptist preachers, for example, that helped lead to Jefferson's statute of religious freedom. Today I may be the victim - but tomorrow it may be you - until the whole fabric of our harmonious society is ripped at a time of great national peril.

Finally, I believe in an America where religious intolerance will someday end - where all men and all churches are treated as equal - where every man has the same right to attend or not attend the church of his choice - where there is no Catholic vote, no anti-Catholic vote, no bloc voting of any kind - and where Catholics, Protestants and Jews, at both the lay and pastoral level, will refrain from those attitudes of disdain and division which have so often marred their works in the past, and promote instead the American ideal of brotherhood.

That is the kind of America in which I believe. And it represents the kind of Presidency in which I believe - a great office that must neither be humbled by making it the instrument of any one religious group nor tarnished by arbitrarily withholding its occupancy from the members of any one religious group. I believe in a President whose religious views are his own private affair, neither imposed by him upon the Nation or imposed by the Nation upon him as a condition to holding that office.

I would not look with favor upon a President working to subvert the first amendment's guarantees of religious liberty. Nor would, our system of checks and balances permit him to do so - and neither do I look with favor upon those who would work to subvert Article VI of the Constitution by requiring a religious test - even by indirection - for it. If they disagree with that safeguard they should be out openly working to repeal it.

I want a Chief Executive whose public acts are responsible to all groups and obligated to none - who can attend any ceremony, service, or dinner his office may appropriately require of him - and whose fulfillment of his Presidential oath is not limited or conditioned by any religious oath, ritual, or obligation.

This is the kind of America I believe in - and this is the kind I fought for in the South Pacific, and the kind my brother died for in Europe. No one suggested then that we might have a "divided loyalty," that we did "not believe in liberty" or that we belonged to a disloyal group that threatened the "freedoms for which our forefathers died."

And in fact this is the kind of America for which our forefathers died - when they fled here to escape religious test oaths that denied office to members of less favored churches - when they fought for the Constitution, the Bill of Rights, and the Virginia Statute of Religious Freedom - and when they fought at the shrine I visited today, the Alamo. For side by side with Bowie and Crockett died McCafferty and Bailey and Carey - but no one knows whether they were Catholics or not. For there was no religious test at the Alamo.

I ask you tonight to follow in that tradition - to judge me on the basis of my record of 14 years in Congress - on my declared stands against an Ambassador to the Vatican, against unconstitutional aid to parochial schools, and against any boycott of the public schools (which I have attended myself) - instead of judging me on the basis of these pamphlets and publications we all have seen that carefully select quotations out of context from the statements of Catholic church leaders, usually in other countries, frequently in other centuries, and always omitting, of course, the statement of the American Bishops in 1948 which strongly endorsed church-state separation, and which more nearly reflects the views of almost every American Catholic.

I do not consider these other quotations binding upon my public acts - why should you? But let me say, with respect to other countries, that I am wholly opposed to the state being used by any religious group, Catholic or Protestant, to compel, prohibit, or persecute the free exercise of any other religion. And I hope that you and I condemn with equal fervor those nations which deny their Presidency to Protestants and those which deny it to Catholics. And rather than cite the misdeeds of those who differ, I would cite the record of the Catholic Church in such nations as Ireland and France - and the independence of such statesmen as Adenauer and De Gaulle.

But let me stress again that these are my views - for, contrary to common newspaper usage, I am not the Catholic candidate for President. I am the Democratic Party's candidate for President who happens also to be a Catholic. I do not speak for my Church on public matters - and the Church does not speak for me.

Whatever issue may come before me as President - in birth control, divorce, censorship, gambling or any other subject - I will make my decision in accordance with these views, in accordance with what my conscience tells me to be the national interest, and without regard to outside religious pressures or dictates. And no power or threat of punishment could cause me to decide otherwise.

But if the time should ever come - and I do not concede any conflict to be even remotely possible - when my office would require me to either violate my conscience or violate the national interest, then I would resign the office; and I hope any conscientious public servant would do the same.

But I do not intend to apologize for these views to my critics of either Catholic or Protestant faith - nor do I intend to disavow either my views or my Church in order to win this election.

If I should lose on the real issues, I shall return to my seat in the Senate, satisfied that I had tried my best and was fairly judged. But if this election is decided on the basis that 40 million Americans lost their chance of being President on the day they were baptized, then it is the whole Nation that will be the loser, in the eyes of Catholics and non-Catholics around the world, in the eyes of history, and in the eyes of our own people.

But if, on the other hand, I should win the election, then I shall devote every effort of mind and spirit to fulfilling the oath of the Presidency - practically identical, I might add, to the oath I have taken for 14 years in the Congress. For, without reservation, I can "solemnly swear that I will faithfully execute the office of President of the United States, and will to the best of my ability preserve, protect, and defend the Constitution * * * so help me God."

John F. Kennedy, Speech of Senator John F. Kennedy, Greater Houston Ministerial Association, Rice Hotel, Houston, TX Online by Gerhard Peters and John T. Woolley, The American Presidency Project https://www.presidency.ucsb.edu/node/274502

Question and Answer Period Following Speech of Senator John F. Kennedy, Ministerial Association of Greater Houston, Houston, TX

September 12, 1960

Mr. MEZA. Due to the press of time we should begin immediately with the question and answer period. You know the ground rules; are there any questions?

QUESTION. Senator Kennedy, I am Glenn Norman, Pastor of Second Baptist Church in Corpus Christi. I think I speak for many that do not in any sense discount or in any sense discount your loyalty and your love to this Nation, or your position, which is in accord with your position, in regard to the separation of church and state. But can I bring it down to where we stand tonight, as two men nearly equal in age, facing each other. If this meeting tonight were held in the sanctuary of my church, it is the policy of my city, that has many fine Catholics in it, it is the policy of the Catholic leadership to forbid them to attend a Protestant service. If we tonight were in the sanctuary of my church, as we are, could you and would you attend, as you have here?

Senator KENNEDY. Yes; I could. As I said in my statement, I would attend any service in the interest - that has any connection with my public office, or, in the case of a private ceremony, weddings, funerals and so on, of course I would participate and have participated. I think the only question would be whether I could participate as a participant, a believer in your faith, and maintain my membership in my church. That, it seems to me, comes within the private beliefs that a Catholic might have. But as far as whether I could attend this sort of a function in your church, whether I as Senator or President could attend a function in your service connected with my position of office, then I could attend and would attend.

QUESTION. Closely allied to it was the position with regard to the Chapel of the Chaplains that was dedicated and which I believe you once had accepted the invitation to attend, and then the press said, I believe, that Cardinal Dougherty brought pressure and you refused to attend.

Senator KENNEDY. I will be delighted to explain. That seems to be a matter of great interest. I was invited in 1947, after my election to the Congress, by Dr. Poling to attend a dinner to raise funds for an interfaith chapel in honor of the four chaplains that went down on the Dorchester, 14 years ago. I was delighted to accept, because I thought it was a useful and worthwhile cause. A few days before I was due to accept, I learned through my administrative assistant, who had friends in Philadelphia - well, first, two things, first that I was listed, and this is in Dr. Poling's book which he describes the incident, as the spokesman for the Catholic faith at the dinner. Charles Taft, Senator Taft's brother, was to be the spokesman for the Protestant faith, and Senator Lehman for the Jewish faith. The second thing I learned was that the chapel, instead of being located as I thought it was as an interfaith chapel, was located in the basement of another church. It was not in that sense an interfaith chapel, and for the 14 years since that chapel was built there has never been a service of my church because of the physical location. I, therefore, informed Dr. Poling that while I would be glad to come as a citizen, in fact, many Catholics did go to the dinner, I did not feel I had very good credentials to attend as the spokesman for the Catholic faith at that dinner to raise funds when the whole Catholic church group in Philadelphia was not participating and because the chapel has never been blessed or consecrated.

I want to make it clear that my grounds for not going were private. I had no credentials to speak for the Catholic faith at a dinner for a chapel in which no Catholic service has ever been held. To this day, unfortunately, no service has been at the present time. But I think if I may separate this, if this were a public matter, I would be glad to go as an individual; but I could not go as a spokesman.

QUESTION. I am Canon Rutenbahr of Christ Church, Houston. I have read the platform and the planks in it with great interest, specially in the realms of freedom, and I note that in the educational section the right of education for each person is guaranteed or offered for a guarantee, and it also says that there shall be equal opportunity for employment, and in another section it says there shall be equal rights to housing and recreation. All of these speak, I think, in a wonderful sense to the freedom that we want to keep here in America. Yet, on the other hand, there is in another place in the platform these words: "We will repeal the authorization for right-to-work laws."

Now, it seems to me that in this aspect here, and I feel that these are much more important than any religious issue - here you are abolishing an open shop, you are taking away the freedom of the individual worker, whether he wants to work and wants to belong to this union or not. Isn't this double talk, guaranteeing freedom on one hand and taking away on the other?

Senator KENNEDY. No, I don't agree with that.

QUESTION. I think there is an economy--

Senator KENNEDY. That provision has been in the platform since 1948, and I am sure there is a difference of opinion between us on that matter, and between many Democrats on that matter. But I think that it is a decision which goes to the economic and political views. I don't think it involves a constitutional guarantee of freedom. In other words, under the provisions of the Taft-Hartley law, a State was permitted to prohibit a union shop. But it was not permitted to guarantee a closed shop. My own judgment is that uniformity in interstate commerce is valuable, and, therefore, I hold with the view that it is better to have uniform laws and not a law which is in interstate commerce - and this is not intrastate but interstate commerce - which permits one condition in one State and another in another. This is not a new provision. It has been in for the last three platforms.

QUESTION. I am Max Dalcke, president of the Gulf Coast Bible College, and pastor of the First Church of God here in Houston, and I am a member of the Houston Association of Ministers.

Mr. Kennedy, you very clearly stated your position tonight in regard to the propagation of the gospel by all religious groups in other countries. I appreciated that much because we Protestants are a missionary people. However, the question I have to ask is this: If you are elected President, will you use your influence to get the Roman Catholic countries of South America and Spain to stop persecuting Protestant missionaries and to propagate their faith as the United States gives to the Roman Catholics or any other group?

Senator KENNEDY. I would use my influence as President of the United States to permit, to encourage the development of freedom all over the world. One of the rights which I consider to be important is the right of free speech, the right of assembly, the right of free religious practice, and I would hope that the United States and the President would stand for those rights all around the globe without regard to geography, religion or--- [Applause.]

QUESTION. Senator Kennedy, this is F. H. Westmoreland, president of the South Bay Baptist

Church, Houston. I have received today a copy of a resolution passed by the Baptist Pastors Conference of St. Louis, and they are going to confront you with this tomorrow night. I would like you to answer to the Houston crowd before you get to St. Louis. This is the resolution:

With deep sincerity and in Christian grace, we plead with Senator John F. Kennedy as the person presently concerned in this matter to appeal to Cardinal Cushing, Mr. Kennedy's own hierarchical superior in Boston, to present to the Vatican Senator Kennedy's statement relative to the separation of church and state in the United States and religious freedom as separated in the Constitution of the United States, in order that the Vatican may officially authorize such a belief for all Roman Catholics in the United States.

[Applause.]

Senator KENNEDY. May I just say that as I do not accept the right of any, as I said, ecclesiastical official, to tell me what I shall do in the sphere of my public responsibility as an elected official, I do not propose also to ask Cardinal Cushing to ask the Vatican to take some action. I do not propose to interfere with their free right to do exactly what they want. There is no doubt in my mind that the viewpoints that I have expressed - [applause] - there is no doubt in my mind that the viewpoint that I have expressed tonight publicly represents the opinion of the overwhelming majority of American Catholics, and I think that my view I have no doubt is known to Catholics around the world. So I am just hopeful that by my stating it quite precisely, and I believe I stated it in the tradition of the American Catholics, away back all the way to Bishop John Carroll, I hope this will clarify it without my having to take the rather circuitous route. This is the position I take with the American Catholic Church in the United States with which I am associated.

QUESTION. We appreciate your forthright statement. May I say we have great admiration for you. But until we know this is the position of your church, because there will be many Catholics who will be appointed if you are elected President, we would like to know that they, too, are free to make such statements as you have been so courageous to make. [Applause.]

Senator KENNEDY. Let me say that anyone that I would appoint to my office as a Senator or as a President, would, I hope, hold the same view, of necessity, of their living up to not only the letter of the Constitution but the spirit. If I may say so, I am a Catholic. I have stated my view very clearly. I don't find any difficulty in stating that view. In my judgment, it is the view of American Catholics from one end of the country to the other. Because I can state it in a way which I hope is satisfactory to you, why do you possibly doubt that I think that I represent a viewpoint which is hostile to the Catholic Church in the United States. I believe I am stating the viewpoint that Catholics in this country hold to the happy relationship which exists between church and state.

QUESTION. Do you state it with the approval of the Vatican?

Senator KENNEDY. I don't have to have approval in that sense. [Applause.] I have not submitted my statement before I read it to the Vatican. I did not submit it to Cardinal Cushing. But my judgment is that Cardinal Cushing, who is the Cardinal of the diocese of which I am a member, would approve of this statement, in the same way that he approved of the 1948 statement of the Bishop. In my judgment, and I am not a student of theology, I am stating what I believe to be the position of my personal position and also the position of the great majority of Catholics across the United States. I hope that other countries may some day enjoy the same happy relationship of a separation of church and state, whether they are in Catholic countries or non-Catholic countries. It seems to me that I am the one that is running for the office of the Presidency and not Cardinal Cushing and not anyone else. [Applause.]

QUESTION. Senator Kennedy, I am K. O. White, pastor of Houston's Downtown First Baptist Church and former pastor of Metropolitan Baptist Church in Washington, D.C. Let me return for a moment to the matter of the Chaplain's Chapel because there will be some questions raised, I am sure, and we would like to have just a little further statement from you. Today I had a telephone conversation with Dr. Poling and received this telegram from him. I am sure you would like to clear this matter up. Let me read briefly from his telegram: "The Memorandum on Religion as an Election Issue," prepared by Senator Kennedy's associates has a section on the Poling incident. This section contains serious factual errors. I believe the Senator will wish to correct the errors or he will wish to withdraw that section. The original draft of the program on the interfaith dinner held in the Bellevue-Stratford Hotel, on December 15, 1947, identified Mr. Kennedy, then Congressman from Massachusetts, as Hon. John F. Kennedy, Congressman from Massachusetts. Mr. Kennedy was never invited as an official representative of a religious organization nor indeed as the spokesman for the Catholic faith. No speaker on that occasion, Catholic, Jew, or Protestant, was identified by his faith. When 2 days before the dinner occasion Mr. Kennedy canceled his engagement, expressed his regret and stated that since his Eminence, the Cardinal, requested him not to come, he as a loyal son of the church had no other alternative. Therefore, it was necessary to destroy this first program and reprint it.

Senator KENNEDY. I will state again that the words I used are a quotation from the Rev. Poling's book, "Spokesman for the Catholic Faith," a book produced about a year ago which first discussed this incident.

Secondly, my memory of the incident is quite clear in fact as good as Rev. Poling's. When the matter was first discussed he stated it took place in 1950 and it is only in the last 2 months that it came forward that the incident took place in 1947. I never discussed the matter with the Cardinal in my life. I first learned of this through Mr. Reardon, my administrative assistant, through Mr. Doyle of the Catholic Welfare Council, who stated that there was a good deal of concern among many of the church people in Philadelphia, because of the location of the chapel and because no service would ever be held in it because it was located in the basement of another church. It was an entirely different situation than the one I had confronted when I first happily accepted. There were three speakers. Kennedy was one of them, Taft was the second, and Senator Lehman was the third. I don't think I misstated that one was supposed to speak for the Catholic faith, as a spokesman, Mr. Poling, one for the Protestant faith, and one for the Catholic faith, and one for the Jewish faith, I was glad to accept the invitation. I did not clear the invitation with anyone. It was only when I was informed that I was speaking, and I was invited obviously as a serviceman because I came from a prominent Catholic family, that I was informed that I was there really in a sense without any credentials. The chapel as I said has never had a Catholic service. It is not an interfaith chapel. Therefore, for me to participate as a spokesman in that sense for the Catholic faith I think would have given an erroneous impression. I have been there 14 years. This took place in 1947. I had been in politics probably 2 months and was relatively inexperienced. I should have inquired before getting into the incident. Is this the best that can be done after 14 years? Is this the only incident that can be charged? [Applause.]

This was a private dinner, not a public dinner, which did not involve my responsibilities as a public official. My judgment was bad only in accepting it without having all the facts, which I wouldn't have done at a later date. But I do want to say I have been there for 14 years. I have voted on hundreds of matters, probably thousands of matters, which involve all kinds of public questions, some of which border on the relationship between church and state. Quite obviously that record must be reasonably good or we wouldn't keep hearing about the Poling incident.

I don't mean to be disrespectful to Reverend Poling. I have a high regard for Dr. Poling. I don't mean to be in a debate about it. But I must say in looking back I think it was imprudent of me in accepting it, but I don't think it shows unfitness for holding public office.

QUESTION. The reason we are concerned is the fact that your church has stated that it has the right, the privilege, and responsibility to direct its members in various areas of life, including the political realm. We believe that history and observation indicate that it has done so. We raise the question because we would like to know if you are elected President and your church elects to use that privilege and obligation, what your response will be under those circumstances.

Senator KENNEDY. If my church attempted to influence me in a way which was improper or which affected adversely my responsibilities as a public servant, sworn to uphold the Constitution, then I would reply to them that this was an improper action on their part, that it was one to which I could not subscribe, that I was opposed to it, and that it would be an unfortunate breach, an interference, with the American political system.

I am confident that there would be no such interference. We have had two Chief Justices of the Supreme Court who were Catholics. We have had two Prime Ministers of Canada who were Catholics. I mentioned De Gaulle and Adenauer. I have already mentioned that [inaudible] as exposed to the pressures which whirl around us, that he will be extremely diligent in his protection of the constitutional separation.

QUESTION. We would be most happy to have such a statement from the Vatican.

Mr. MEZA. Because of the briefness of the time, let's cut out the applause.

QUESTION. B. E. Howard, minister of the Church of Christ. First of all I should like to quote some authoritative quotations from Catholic sources and then propose a question. "So that a false statement knowingly made to one who has not a right to the truth will not be a lie." Catholic Encyclopedia, volume 10, page 696. "However, we are also under an obligation to keep secrets faithfully and sometimes the easiest way of fulfilling duty is to say that is false or tell a lie." Catholic

Encyclopedia, volume 10, page 195. "When mental reservation is permissible, it is lawful to corroborate one's utterances by an oath if there be an adequate cause." Article on perjury, Catholic Encyclopedia, volume 11, page 696. "The truth we proclaim under oath is relative and not absolute." "Explanation of Catholic Morale," page 130.

Just recently from the Vatican in Rome this news release was given from the official Vatican newspaper, and I am quoting that of May 19, 1960, Thursday. Stated that the Roman Catholic hierarchy had the right and duty to intervene in the political field to guide its philosophy. The newspaper rejected what is termed the absurd split of conscience between the believer and the citizen. However, Observatore Romano made it clear that its stern pronouncement was valid for Roman Catholic laymen everywhere. It deplored the great confusion of ideas that is spreading especially between Catholic doctrine and social and political activities and between the ecclesiastical hierarchy and the late faithful in the civil field. Pope John recently gave this statement according to the St. Louis Review, dated December 12, 1958: "Catholics may unite their strength toward the common aid of the Catholic"--

FROM THE FLOOR. I object to this. The time is running out.

QUESTION. This is the question: Do you subscribe to the doctrine of mental reservation which I have quoted from the Catholic authorities? Do you submit to the authority of the present Pope which I have quoted from these quotations?

Senator KENNEDY. Let me say in the first place I have not read the Catholic Encyclopedia and I don't know all the quotation you are giving me. I don't agree with the statement. I find no difficulty in saying so. But I do think probably I could make a better comment if I had the entire quotation before me.

But in any case I have not read it before. If the quotation is meant to imply that when you take an oath you don't mean it or it is proper for you to make oaths and then break them, it is proper for you to lie, if that is what this states, and I don't know whether that is what it states unless I read it all in context, then, of course, I would not agree with it.

Secondly, on the question of the Observatore Romano article, once again I don't have that in full. I read the statement of last December which was directed to a situation in Sicily where one of the Catholics were active in the Communist Party. But I am not familiar with the one of May 1960 which you mentioned. In any case the Observatore Romano has no standing, so far as binding me. Thirdly, the quotation of Pope John of 1958, I didn't catch all of that, and if you will read that again I will tell you whether I support that or not.

QUESTION. Pope John XXIII only recently stated according to the St. Louis Review, date of December 12, 1958, "Catholics must unite their strength toward the common aid and the Catholic hierarchy has the right and duty of guiding them." Do you subscribe to that?

Senator KENNEDY. I could not describe - guiding them in what area? You are talking about in the area of faith and morals, in the constructions of the church. I would think any Baptist minister or Congregational minister has the right and duty to try and guide his flock. If you mean by that statement that the Pope or anyone else could bind me in the fulfillment, by a statement in the fulfillment, of my public duties, I say no. If that statement is intended to mean, and it is very difficult to comment on a sentence taken out of an article which I have not read, but if that is intended to imply that the hierarchy has some obligation or has an obligation to attempt to guide the members of the Catholic Church, then that may be proper. But it all depends on the previous language of what you mean by "guide." If you mean direct or instruct on matters dealing with the organization of the faith, the details of the faith, then, of course, they have that obligation. If you mean under that he could guide me or anyone could guide or direct me in fulfilling my public duty, then I do not agree.

QUESTION. Thank you, sir. Then you do not agree with the Pope in that statement?

Senator KENNEDY. You see, that is why I wanted to be careful, because that statement, it seems to me, is taking out of context what you just made to me. I could not tell you what the Pope meant unless I had the entire article. I would be glad to state to you that no one can direct me in the fulfillment of my duties as a public official under the U.S. Constitution. That I am directed to do to the people of the United States, sworn to do, took an oath to God. That is my flat statement. I would not want to go into details on a sentence which you read to me which I may not understand completely.

Mr. MEZA. Gentlemen, we have time for one more question, if it can be handled briefly.

QUESTION. I am Robert McLaren, from the Westminster Presbyterian Church, Houston. You have been quite clear and I think laudably so on the matter of separation of church and state and have answered my questions that have come up around it. There is one question, it seems to me, that is quite relevant. This relates to your statement that if you found by some remote possibility a real conflict between your office as President, that you would resign that office if it were in conflict with your church.

Senator KENNEDY. No, I said with my conscience.

QUESTION. In the solace of errors of Pope Leo XIX, which the Catholic Encyclopedia states is still binding, although from a different century, still binding on all Catholics, there are three specific things which are denounced including the separation of state and church, the freedom of religions other than Catholic to propagate themselves, and the freedom of conscience. Do you still feel these being binding on you, that you hold your oath of office above your allegiance to the Pope on these issues.

Senator KENNEDY. Well, let us go through the issues because I don't think there is a conflict on these three issues. The first issue as I understand it was on the relationship between the Catholics and the state and other faiths.

QUESTION. No, the separation of church and state, explicitly--

Senator KENNEDY. I support that, and in my judgment the American Bishops statement of 1948 clearly supported it. That in my judgment is the view held by Catholics in this country. They support the constitutional separation of church and state and are not in error in that regard.

QUESTION. The second was the right of religions other than the Roman Catholic to propagate themselves.

Senator KENNEDY. I think they should be permitted to propagate themselves, any faith, without any limitation by the power of the state, or encouragement by the power of the state. What is the third one?

QUESTION. The third was the freedom of conscience in matters of religion, and also in point 46, I believe it is, it extends to freedom of mind in the realms of science.

Senator KENNEDY. Well, I believe in freedom of conscience. Let me just - I guess our time is coming to an end, but let me say finally that I am delighted to come here today. I don't want anyone to think because they interrogate me on this very important question, that I regard that as unfair questioning or unreasonable or somebody who is concerned about the matter is prejudiced or bigoted. I think this fight for religious freedom is basic in the establishment of the American system, and therefore any candidate for the office, I think, should submit himself to the questions of any reasonable man. [Applause.]

My only objection would be - my only limit to that would be if somebody said regardless of Senator Kennedy's position, regardless of how much evidence he has given that what he says he means, I still would not vote for him because he is a member of that church I would consider that unreasonable. What I would consider to be reasonable in an exercise of free will and free choice is to ask the candidate to state his views as broadly as possible, investigate his record to see whether what he states he believes and then to make an independent rational judgment, as to whether he could be entrusted with this highly important position. I want you to know that I am grateful to you for inviting me tonight. I am sure I have made no converts to my church. [Laughter.] But I do hope that at least my view, which I believe to be the view of my fellow Catholics, who hold office, I hope it may be of some value in at least assisting you to make a careful judgment. Thank you. [Applause.]

John F. Kennedy, Question and Answer Period Following Speech of Senator John F. Kennedy, Ministerial Association of Greater Houston, Houston, TX Online by Gerhard Peters and John T. Woolley, The American Presidency Project https://www.presidency.ucsb.edu/node/274504

John F. Kennedy’s Address to the Greater Houston Ministerial Association: A Speech of Apologia
A Senior Project Presented to

The Faculty of the Communication Studies Department California Polytechnic State University, San Luis Obispo
In Partial Fulfillment
of the Requirements for the Degree Bachelor of Arts
by
Carlos Ernesto La Puente June 2010

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Table of Contents

Introduction........ 1
Historical Significance........ 2
Historical Background 5
Kennedy and the Rhetorical Situation 8
Genre Criticism--Apologia 15
Four Factors of Apologia 16
Apologia Analysis........ 20
Four Postures of Apologia 26
A Theory of Image Restoration 28
Conclusion 32

John F. Kennedy's Address to the Greater Houston Ministerial Association: A Speech of Apologia

Depending upon one's background, the word "Catholicism" will conjure different images in one's mind. To some, it may mean a foreign religion, one with elaborate rituals, hierarchy, and incense. To others, it may be a familiar religion, one whose principles guide moral behavior. The public opinion in 1960, however, was very different. During the presidential campaign, Catholicism was thought to signify a threat to religious freedom. For many Americans, it meant an attempt from the Vatican to influence politics. Some, like Gerald Smith, a Protestant minister, asserted that if a Catholic were to be elected President, Protestants would lose their property, become disenfranchised, and even slaughtered. And so, because of no other reason than his family was Catholic, and in spite of the fact that his Catholicism was not in line with the Church's bishops or officials, John Fitzgerald Kennedy entered the 1960 presidential election with the task of neutralizing the issue of his

Catholicism in order to be seriously considered for the presidency. Kennedy encountered many obstacles along his campaign, but in choosing the right moment to address the religious issue—an invitation by the Greater Houston Ministerial Association to speak on September 12—and method in which to do so—a speech of self-defense, apologia, which would subtly put the public on the defensive—he not only neutralized the religious issue, but used it to his benefit, ultimately changing public opinion and achieving the presidency.

To better understand the impact of Kennedy's speech of self-defense, this paper will first examine the historical significance of Kennedy's address and why it is useful for communication scholars in particular. These reasons include the success of the address, the role the mass media played in Kennedy's candidacy, and the obstacle itself—public opinion pitted against Kennedy and his Catholicism—that was overcome. Then the paper will further examine the historical context of Kennedy's address. The rhetorical situation will then be examined, analyzing Kennedy's address with particular themes in mind: exigence, rhetor, and audience. A discussion of the genre criticism of apologia will follow, with an analysis of Kennedy's address and its classification of a speech of apologia. And finally, a theory of image restoration will be used to gain insight into Kennedy's address and its response to attacks.

Historical Significance

When examining the address of John F. Kennedy, it is important to understand the rhetoric that the presidency produces. Kennedy was not yet president, but the rhetoric produced was guided by a team that worked together towards a singular purpose: Kennedy achieving the presidency. Although Theodore Sorenson was a prominent ghost-writer in Kennedy's campaign and presidency, the rhetoric produced was tied together by Kennedy determining it to become part of his campaign. Because of the significant number of individuals responsible for the presidency, Campbell and Jamieson state: "[W]e shall treat the presidency as an aggregate of people, as a corporate entity. From that perspective, an administration encompasses more than a single person, the president. In that sense, the presidency is a syndicate generating the actions associated with the head of state, including those deeds done in words. And whoever the author(s) may be, once the president takes authorial responsibility for them, the words become an integral part of that presidency" (11). This is important to keep in mind, because the words that would shape the Kennedy's campaign were the result of a group of people considering the best route to neutralize the Catholic issue and transform it into a tool used to bring about success.

As communication scholars, it is important to understand the success of an address or work to help determine its value. As Campbell and Jamieson state, "we often use generic analysis to explain generally acknowledged successes or failures" (12). It is known that this was a pivotal moment in Kennedy’s campaign because the address was brought forth by the abundant number of attacks against Kennedy. Considering all the tract information published against Kennedy leading up to his address and the election, Jamieson writes: “If judged by the quantity of printed material attacking Kennedy on the issue and the amount of television and radio time purchased to respond, Kennedy's religion was indeed the major issue of the 1960 campaign. The distributors of the anti-Catholic print material and the Fair Campaign practices Committee placed the number of pieces in the tens of millions at a cost of hundreds of thousands of dollars” (136). Kennedy used the address to effectively combat the attacks made; because his address was successful, it was recognized as one of the best tools at Kennedy’s disposal. Jamieson writes: “Leonard Reinsch, Kennedy's TV and radio adviser, confirms that more total time was purchased to rebroadcast Kennedy's September 12 performance in Houston than any other single piece of campaign propaganda” (136).

For mass media scholars, this is an important address to examine because of what it had to offer. Kennedy knew that it was going to be worthwhile to televise and rebroadcast, and Halberstam writes that “it became a staple of the campaign, hundreds and hundreds of copies of the film were made and it was shown whole, used for spots, and played and played again, and most significantly, used as a means of advancing him – with Kennedy coming into a given area they could build interest in him this way” (326). Although the address was made during Kennedy’s campaign, it had facets of drama that the mass media typically use to appeal to the masses. “The film had what television loved, real drama, real confrontation, and there he was, a real live war hero, walking into the pit and winning. With film like this (which you did not have to show if it had turned out poorly), and with money, you could pick your audience, and you

could show yourself as you wanted to be shown” (326). The address itself and the range of influence provided by the mass media would be the perfect combination for Kennedy to practice Aristotle’s definition of rhetoric, the ability to identify the appropriate means of persuasion in a given situation.

A good reason to look at this address is the obstacle that was presented. Kennedy had a good chance of becoming the next president and the party had given him the nomination, but that did not mean that the road to the presidency would from then on be an easy one. In fact, it presented a major barrier that had not been faced in over 30 years since Al Smith dismally lost the presidential election in 1928 and a barrier that has not come up as dramatically as it did in the 1960 campaign. The issue of religion was one that would almost decide the presidential election and Kennedy had many hurdles to overcome. This is one reason why the speech should be explored by communication scholars. Through the power of his words, Kennedy shaped the future of the presidential race and of the nation. His speech visibly performs what Lloyd F. Bitzer described effective and powerful rhetoric could achieve: “In short, rhetoric is a mode of altering reality, not by the direct application of energy to objects, but by the creation of discourse which changes reality through the mediation of thought and action. The rhetor alters reality by bringing into existence a discourse of such a character that the audience, in thought and action, is so engaged that it becomes mediator of change" (60).

With Kennedy's address, the campaign had reached a pivotal moment in the nation's history. Robert V. Friedenberg, examined Kennedy's address and writes that "the 1960 campaign was noteworthy for a host of reasons. Certainly one of them was the fact that a Roman Catholic, John F. Kennedy, won the presidency. Kennedy best addressed the issue of his Catholicism in his speech to the Greater Houston Ministerial Association. That speech was

widely utilized during the campaign. It likely helped Kennedy, more than any other single speech he gave, to overcome what some perceived to be his most formidable obstacle to election" (xiv).

The role of the mass media is especially important to note when analyzing the significance of Kennedy's address. As Alger points out, the mass media is a vital link in the political system. He writes that "for the vast majority of the general public, with their attention focused primarily on personal concerns, there is a great physical and psychological distance from political affairs. That distance between political actors and the public (during elections and between them) is bridged by the communications of the mass media" (6). With Kennedy's address, one realizes that the public had been influenced by other tract materials, and there was a need for a different public image that would stick in the minds of the public. In understanding this, scholars can appreciate the importance of the mass media and role it plays in changing the manner in which candidates approach their campaign. As Alger writes, "The mass media are, then, the vital connecting link in the political system today. Indeed, as one observer commented in a speech to the nation's broadcasters: 'The flow of ideas, the capacity to make informed choices, the ability to criticize, all of the assumptions on which political democracy rests, depend largely on communications. And you are the guardians of the most powerful and effective means of communication ever designed.' That observer was President John F. Kennedy" (6). Historical Background

Prior to 1960, it was unlikely that a Catholic would be nominated for the presidency. This was for a number of reasons, all of which had an effect on Kennedy's campaign. Kennedy was born in 1917 and was merely around the age of 11 when Al Smith, a Catholic, dramatically lost the presidential election. Until Kennedy's campaign, there had been a "Protestant monopoly

on the presidency" and "anti-Catholicism had long permeated twentieth-century U.S. liberalism" (Carty 578). Catholics were claimed to have a loyalty not to the United States but to the Roman Catholic Church. In fact, in 1959 former President Harry S. Truman said, "Catholics have a loyalty to a church hierarchy that I don't believe in...You don't want to have anyone in control of the government of the United States who has another loyalty, religious or otherwise." His views were shared by many who were members of groups like Protestant and Other Americans United for Separation of Church and State (POAU). Paul Blanshard, a libertarian and lawyer for POAU, put forward much of the criticism that Kennedy had to combat. Blanshard argued that "Catholic power threatened American democracy and global religious liberty" and viewed the "Catholic Kennedy's presidential ambitions as potentially subversive to U.S. freedoms" (Carty 583). Pamphlets and tracts were produced across the nation, many directly referencing Blanshard's comments. Because "these publications demanded absolute support for church-state separation, which libertarians believed no Catholic could honestly provide," (Carty 590) another highly contentious issue was the idea of the Vatican having a say in American politics through a Catholic president. The attacks against Kennedy's Catholicism also reached preposterous conclusions. Gerald Smith, a conservative Protestant minister, spent many resources to spread messages that argued that "a vote for a Catholic was a vote for the pope, that to circumvent oaths to which they could not in good conscience swear, Catholics appended secret reservations that invalidated the oaths, that Kennedy would institute Catholicism as a state religion, and—more extreme still—that, if Kennedy were elected, Protestants would be robbed of their property, disenfranchised, and slaughtered" (Jamieson 128).

Almost all accusations against Kennedy came from behind a filter that saw Catholic leaders as impossible to act without receiving pressure from the Vatican, and there were also those who believed that there was an alleged different Catholic perception of church-state separation. As Jamieson writes: "Ockenga argued that Kennedy's alleged insistence on the church-state separation was analogous to Nikita Khrushchev's advocacy of world peace during the Soviet premier's tour of the United states in 1959. Just as the Communist interpretation of world peace differed from that of the free world, so did the Catholic perception of church-state separation deviate from the Protestant view" (161).

While some of these attacks may seem ridiculous, the truth of the matter is that it is an audience's perception of the truth of the facts they believe that matters most. As Alger writes: "If we are to understand people's opinions and their ultimate behavior, and the related question of how they respond to political communications through the media, we must understand what people believe, factually correct or otherwise" (18). This determined the problems and obstacles along Kennedy's road to the presidency—there was always going to be the anti-Catholic voice that spoke of the unmitigated evils and unfounded accusations of problems associated with Catholicism. Public opinion was the Goliath that Kennedy was going to defeat, but instead of a sling and a stone, Kennedy used his understanding of the values of public opinion – he capitalized on the search for justice by framing himself as the candidate for which whose vote meant religious tolerance. And as Alger points out, "values are just as crucial to be aware of in an analysis of public opinion and political behavior. It is especially important to be aware of them when analyzing political communication through the mass media" (9).

In September, Kennedy decided to accept the invitation from the Greater Houston Ministerial Association to speak to Protestant ministers. Although Kennedy had stated his views

on previous occasions, this event was noteworthy because of its proximity to the national election and the fact that Kennedy was able to speak for all those who had been oppressed by religious intolerance. This address significantly changed the way that many Americans viewed Kennedy, his policies, and his religion. Although the address was specifically to Protestant ministers, people across the nation were listening. "In a statement released the same day...several Protestant, Catholic, and Jewish leaders-including some who had earlier questioned Kennedy on religious grounds and had been highly critical of the Catholic Church-called for tolerance of religious differences" (Carty 596).

Kennedy and the Rhetorical Situation

Genre criticism comes from the idea that human beings interact in similar ways to similar situations presented to them over the course of time. Certain types of speech have similar characteristics in accordance to the situation that calls for its existence. Lloyd F. Bitzer clearly helped produce ideas for generic criticism when he wrote, "From day to day, year to year, comparable situations occur, prompting comparable responses; hence rhetorical forms are born and a special vocabulary, grammar, and style are established" (13). The genre of apologia, a speech of self-defense, is unlike other types of speech in the sense that it has been part of human language for centuries, and not a type of rhetoric that has been brought to existence through contemporary movements.

Other scholars have expanded on Bitzer's ideas, and have explained that rhetorical studies emphasize "contingency and choice rather than predictability and control. According to this view, the rhetor (speaker or writer) makes choices, with an audience in mind, about the best way to achieve his or her goals in the context of a specific situation. Those choices—about such matter as argument selection, framing, phrasing, evidence, organization, and style, as well as

about staging, choreography, and other aspects of the presidential performance—are embodied in the text that the rhetor composes and the context in which it is delivered. An audience, also influenced by context, perceives this text, interprets it, participates thereby in determining what it means, and is affected by it" (Zarefsky 608-9). To better understand the implications of rhetorical studies, especially the rhetorical situation, when analyzing Kennedy's address, it is best to turn to Keith Grant-Davie.

While Bitzer was the first to develop the study of the rhetorical situation—of which the most important ideas include exigence, audience, and constraints—other scholars have expanded on his research to deepen the understanding of rhetorical situations. Bitzer explains that exigence is required for the rhetorical situation because “rhetorical discourse comes into existence as a response to a situation, in the same sense that an answer comes into existence in response to a question, or a solution in response to a problem” (5) and that “any exigence is an imperfection marked by urgency; it is a defect, an obstacle, something waiting to be done, a thing which is other than it should be,” (6); but Keith Grant-Davie expands the idea of exigence to give scholars more insight into rhetorical situations. For a fuller understanding of exigence, Grant-Davie asks three questions: What is the discourse about? Why is the discourse needed? And what is the discourse trying to accomplish?

When asking what the discourse is about, one should look at the documents or the discourse that is calling forth the rhetor's response at a deeper, even abstract level. Grant-Davie writes that “what the discourse is about becomes a more interesting and important question, and a source of exigence, if asked at more abstract levels – in other words, if the question becomes ‘What fundamental issues are represented by the topic of the discourse?’ or ‘What values are at stake?’” (267). This invites scholars to examine Kennedy’s address in ways that plumb the depths of its meanings and importance—instead of the address being the result of an invitation to speak, there are values of tolerance and religious freedom at stake. Grant-Davie touches on some of these themes as he explains that “political speeches often use specific topics to represent larger, more enduring issues such as questions of civil rights, public safety, free enterprise, constitutionality, separation of church and state, morality, family values, progress, equality, fairness, and so forth. These larger issues, values, or principles motivate people and can be invoked to lead audiences in certain direction on more specific topics” (267). This is evident in Kennedy’s address, as the idea of separation of church and state was a major issue in the campaign and road to the presidency. More knowledge is gained when asking what the address is at a deeper and abstract level.

To better understand exigence, we must as why the discourse is needed, “what has prompted the discourse, and why now is the right time for it to be delivered” (Grant-Davie 268). The religious issue kept making its way into all aspects of Kennedy’s campaign, and while Kennedy had addressed it before, the topic was too great of a concern in the eyes of the public to let it be dismissed or settle quickly and quietly. Exigence, Grant-Davie writes, “may have been created by events that precede the discourse and act as a catalyst for it; and the timing of the discourse may also have been triggered by an occasion, such as an invitation to speak.” This was the case for Kennedy. His address was needed at that particular time in his campaign, and the Greater Houston Ministerial Association provided the very outlet Kennedy needed. Grant-Davie also writes that one must ask “why the issues are important and why the questions it raises really need to be resolved. The answer to this question may be that the issues are intrinsically important, perhaps for moral reasons. Alternatively, the answer may lie in the situation's implications. Exigence may result not from what has already happened but from something that is about to happen, or from something that might happen if action is not taken," (268). When asking why the discourse was needed, it is important to consider how the public opinion was against Kennedy, in terms of his Catholicism, and that this had to be overcome. But Kennedy also pointed out that if this mindset that prompted discrimination were to dominate the American people, then the nation itself would be "the loser," not giving great leaders opportunities because of their religion. These were the implications and possible failures that the America would face.

The last question to consider in regards to exigence is what is the discourse trying to accomplish? Although he wrote in general terms, Grant-Davie's explanation provides insight that may seem specifically related to the Kennedy address. He asked, "What are the goals of the discourse? How is the audience supposed to react to the discourse? ... The rhetor's agenda may also include primary and secondary objectives, some of which might not be stated in the discourse. The immediate objective of a presidential campaign speech might be to rebut accusations made by a rival, while a secondary objective might be to clarify the candidate's stance on one of the issues or help shape his image, and the broader objective would be to persuade the audience to vote for the candidate when the time comes" (269). This was exactly the objective of Kennedy's address – while he was invited to speak to a specific audience and used it as a chance to refute the attacks made against him, Kennedy knew the reach and scope of the secondary audience, all who would hear or watch the address and its rebroadcasts. It was a pivotal moment in the campaign that would be used to his advantage if Kennedy succeeded in getting the public to view him favorably and as the candidate to vote for. In resolving these issues and understanding what the discourse was trying to accomplish, one can better understand the exigence prompting Kennedy's address.

Bitzer's idea of the role of the rhetor in the rhetorical situation is also expanded. Grant- Davie includes rhetors as part of the rhetorical situation before the discourse is produced (unlike Bitzer's understanding of the rhetor) because he states that "rhetors are as much constituents of their rhetorical situations as are their audiences. Their roles, like those of audiences, are partly predetermined but usually open to some definition or redefinition. Rhetors need to consider who they are in a particular situation and be aware that identity may vary from situation to situation" (269). In other words, Kennedy was fully aware of how the public viewed him and his Catholicism, and in that light he played a huge role in the rhetorical situation by considering what address would be best. When it came to envisioning Kennedy's presidency, many Americans had perceived threats against their freedom because of his religion. Although some of these threats were unfounded, their imagined consequence produced a great perceived threat. Grant-Davie writes that a rhetor's ethos "will depend on what [the audience] know and think of the rhetor's past actions, so the 'real' or 'historical' author is not a stable 'foundation' identity but depends partly on the audience in a particular rhetorical situation. Like exigence, then, audience can influence the identity of the rhetor" (270). The Catholicism that Kennedy had lived was part of the past that the audience saw, and their misinterpretation led to a faulty "foundation identity." Kennedy had this in mind when giving his address. This was also evidenced when Kennedy brought attention to the fact that he had fought in the Pacific, and that his brother had died in military service, and that "no one suggested then that we had a divided loyalty." He took part of the past that he knew the audience was aware of, and used it to add significance to that aspect of his character.

When understanding the rhetor's ethos, Kennedy was in a very peculiar situation. He had to deal with his Catholicism in a way that demonstrated integrity and unwavering values, and yet could not completely abandon it when it might have proved useful to his campaign. Integrity helps a rhetor develop ethos because it is a "measure of consistency they take from situation to situation instead of putting on a completely new mask to suit the needs of every new audience and situation" (270). This was evident when Kennedy decided to stick with his Catholicism, and Jamieson writes that this integrity might not just have been for the purpose of ethos, but instead it was for politics and votes. "Of course, in tackling the issue of religion, Kennedy could have argued, with some justification, that his baptism as Catholic was an accident of birth and that he was well grounded neither in his church's history nor in its doctrine and hence unlikely to be shackled by either. But Kennedy would not make these arguments. Early on in the campaign, the staff had defined drawing back the Catholic democrats who had bolted to Ike in 1956 as a necessary part of winning. If he were to do so, Kennedy could not begin by spurning the Catholic religion he and they shared" (125).

Audience is very important to consider in the rhetorical situation. Douglas Park expands Bitzer's idea of audience by writing that its meaning goes in two distinct directions: "one toward actual people external to a text, the audience whom the writer must accommodate; the other towards the text itself and the audience implied there, a set of suggested or evoked attitudes, interests, reactions, conditions of knowledge which may or may not fit with the qualities of actual readers or listeners" (249). Kennedy was aware of this and was able to create an address that would be effective in producing a certain effect in the Greater Houston Ministerial Association, but also an address that would help achieve significant change in how all members of the audience who would eventually hear his address viewed Kennedy and his Catholicism. Although Kennedy would not abandon his Catholicism, he was sure to distinguish it from misconceptions of how it would affect his presidency, and this affected how he presented himself, stating that "contrary to common newspaper usage, I am not the Catholic candidate for

President. I am the Democratic party's candidate for President who happens also to be a Catholic." Grant-Davie writes that "rhetors' conceptions of audiences may lead them to create new roles for themselves—or adapt existing roles—to address those audiences. Rhetors may invite audiences to accept new identities for themselves, offering readers a vision not of who they are but of who they could be. Readers who begin the discourse in one role may find themselves persuaded to adopt a new role, or they may refuse the roles suggested by the discourse" (271). This was Kennedy's intent, and one that he accomplished.

Zarefsky has identified four ways in which a president can exercise their power of definition, and they important to consider while studying Kennedy's address. The first way a president can exercise their power of definition is by creating associations with other terms, expanding the meaning of a term to cover the new case at hand. The second is by dissociation, breaking a concept into parts in order to identify one's proposal with the more favored part. The third by identifying a situation with one or more condensations symbols—these are symbols which designate no clear referent but 'condense' a host of different meanings and connotations that otherwise might diverge. They are particularly useful in defining an ambiguous situation because people can highlight different aspects of the symbol yet reach the same conclusion. And the fourth way presidents exercise power of definition is by framing, shifting, postulating a different frame of reference from one in which the subject normally is viewed. The effect is that people see the things "in a different light" and their attitudes about it therefore change (612-3).

These ways of exercising power of definition can be seen in Kennedy's addresses. Kennedy had to make the decision to raise the issue of religion and, White writes, during the primaries, Kennedy's decision was clear—attack the issue head on. "Whether out of conviction or out of tactics, no sounder Kennedy decision could have been made. Two Democratic candidates were appealing to the commonalty of the Democratic Party; once the issue could be made one of tolerance or intolerance, Hubert Humphrey was hung. No one could prove to his own conscience that by voting for Humphrey he was displaying tolerance. Yet any man, indecisive in mind on the Presidency, could prove that he was at least tolerant by voting for Jack Kennedy" (107). This is clear in Kennedy's address in Houston as well. The condensation symbol of religious tolerance ("I believe in an America where religious intolerance will someday end"), separating himself from the misconceptions people associated with him and his Catholicism ("I do not speak for my church on public matters; and the church does not speak for me"), and portraying himself as the Democratic candidate, not the Catholic candidate, these were all embodied in Kennedy's address and show his use of exercising power over definition.

Genre Criticism—Apologia

The genre criticism of apologia is also an element that should be considered when understanding the value contained in Kennedy's address. When specifically looking at Kennedy's address, Halford

Ross Ryan explored the criticism of other scholars regarding the aspect of self-defense given by Kennedy.

“David Henry holds that Senator John Kennedy’s famous speech at Houston, Texas, in 1960 was built upon themes of apologia that were developed from earlier exchanges on the Catholic issue. In addition to detailing Kennedy’s grace, wit, and intelligence, in surmounting powerful Protestant accusations against his Catholicism, Henry also demonstrates another major critical finding that follows. Second, Henry and several writers, working independently of one another, conclude that the time-worn military aphorism, the best defense is a good offense, makes manifest sense in apologetic discourse...[A] substantial part of Kennedy’s success at Houston, and in his earlier exchanges on the Catholic issue, was a function of his rhetorical strategy to merge accusation with apologia. JFK redefined the issue in terms of religious tolerance and separation of church and state, and then skillfully portrayed his accusers as violators of Article VI of the Constitution that forbade a religious test for officeholders” (“Oratorical Encounters” xxiv)

These are some of the important aspects of Kennedy’s address that should be brought to mind by communication scholars. Not only will the examination of Kennedy’s address be beneficial to those who study rhetoric and communication but to all those who hold a civic responsibility to fully understand the speeches that produce a significant change in the American public.

In recent decades faith and religion have played a greater role in politics, with occurrences such as President George W. Bush stating Jesus Christ as his favorite philosopher. By examining Kennedy’s address closely, readers are able to understand what led the presidential hopeful to claim that he believed in an America where “the separation of church and state is absolute” and how this idea is still relevant today. This paper will examine Kennedy’s address and determine if it successful in fulfilling the required characteristics of the genre of apologia, a speech of self-defense, and also look at a theory of image restoration. This will give insight into the responses political candidates make regarding their faith and its role in politics and whether responses are made due to self-defense or mere revelations of the speaker’s faith. First I will give a description of the generic criticism of apologia, followed by a theory of image restoration. Then I will describe Kennedy’s address and the context and follow with an analysis of the address using the aforementioned methods.

Four Factors of Apologia

The generic criticism of apologia was created by B.L. Ware and Wil A. Linkugel who claim there are four factors of verbal self-defense: denial, bolstering, differentiation, and transcendence. The first two factors, denial and bolstering, are reformative while the second two, differentiation and transcendence, are transformative. Denial is easy enough to understand; it is when a speaker denies “alleged facts, sentiments, objects, or relationship” (419). The speaker is limited in what they can deny by what is known by the audience. Denial is not only limited to specific action but can expand to a denial of intent. Bolstering is somewhat like the opposite of denial in that the speaker seeks to identify himself with something good. The speaker does not necessarily remove the situation they are currently in. Rather, they try to bring to mind another situation they are in that the audience feels positive towards. These two factors, Ware and Linkugel claim, are reformative, they do not change the meaning of the situation and arguments.

Differentiation and transcendence, the other two factors, however, are transformative because they do seek to change meanings. Differentiation entails taking a component of the argument made against the speaker and taking it out of its broad context to view it in a different manner. If the new meaning is significantly different and positive, this helps the audience see the particular argument as favorable. The last factor Ware and Linkugel describe is transcendence. This factor uses strategies that help associate an argument against the speaker with a bigger issue that the audience may not see.

Ryan described apologia as a component of a certain speech set, one that included accusation and defense. The element that gives life to the rhetorical situation is the accuser and the accuser can create the situation based on two things: policy or character.

“The accuser is the affirmer or the rhetorical prime-mover in the speech set. The accuser perceives an evil or an exigence, he is motivated to expose it, and the rhetorical response to that motivation is a kategoria. An accusation always begins with, but is not necessarily limited to, the accusee’s policy, a term I use to denote a wide range of actions or practices: vice, theft, sexual misconduct, libel, treason, illegal activities, etc....While the accuser may make an accusation based on policy or character, it is quite possible that the two ideas overlap one another. And even though the kategoria can deal specifically with policy, the apologia given in response may be of character (“Kategoria and Apologia” 256-7).

Also relevant to the analysis of Kennedy’s address is how Ryan deals with the time frames in which accusations are made. “One should note that while most accusations against policy deal with past actions (like Senator Nixon’s campaign fund and MacArthur’s refusal to obey orders) or with continuing practice (like the media’s unfavorable coverage of President Nixon’s Viet Nam war policies), some accusations can deal with a future policy before it is actually practiced” (“Kategoria and Apologia” 256).

This analysis need not resemble others because while the similarities are important to consider, not all must taken into account. As Campbell and Jamieson write: “Although generic analysis emphasizes similarities, generic critics are not interested in any and every similarity. Rather, they are interested in those similarities that make works rhetorically absorbing and consequential...A critical use of genre operates pragmatically to consider ends, that is, the functions or purposes of discourse, and means, the strategies of language and argument through which such rhetorical ends can be achieved. In short, generic analysis studies the links between function and form" (8). This analysis will take into account the forms and manners in which Kennedy's addressed achieved its end, changing the public's view on his Catholicism as a barrier to the presidency and leaving the audience with a significantly changed perception that Kennedy was the candidate for whom a vote meant religious tolerance.

There are also two types of evaluations from a generic perspective. Through this type of criticism, the scholar is equipped with a set of guidelines to analyze the artifact. As Campbell and Jamieson write: "[Generic criticism] empowers a critic to ask how well an individual work is adapted to achieve its ends, a concern analogous to considering the performance rules for kinds of linguistic acts, for example, issuing a command or asking a question" (12). This is where the genre criticism of apologia is useful—it helps the scholar to understand the ways in which Kennedy employed tools of self-defense, and how he was to change perceptions due to the nature of his address and the arguments he engaged. But the second type of evaluation is just as important to consider, because it asks the critic to find the deeper reasons why certain addresses and discourse are remembered for their greatness. "In addition, a generic perspective facilitates identification of outstanding examples of a given type, messages that not only fulfill generic functions, but do so in innovative and memorable ways, ways that render them unique rhetorical acts with the power to initiate generic change and to facilitate institutional flexibility" (Campbell and Jamieson 12).

As mentioned earlier, Kennedy's address was significant in the effects it produced, but it is notable to this day, not just for the effects of the past, but for how it embodies values that America will always identify itself with and long to promote. Because of the position Kennedy had been in, his campaign and the manner in which he handled the challenges gave him an advantage that would prove beneficial to the end. In an earlier exchange with Franklin Roosevelt junior where Kennedy addressed the religion issue, Kennedy "demonstrated that he did not need to clear his statements with either Cardinal Cushing or the pope and also showed that he could withstand the pressure of scrutiny by skeptics and their stand-in FDR Jr. The tension of the encounters riveted attention and invited identification with Kennedy as the candidate under siege and as the champion of such American virtues as fairness, tolerance, equal opportunity, freedom of religion, and separation of church and state" (Jamieson 126). This was before Kennedy's address to the Greater Houston Ministerial Association, and yet there was already a sense of greatness surrounding Kennedy's responses. With this in mind, it is easy to see why Jamieson wrote that "Kennedy's masterful apologia before the Greater Houston Ministerial Association is, in my judgment, the most eloquent speech he made as either candidate or president" (130).

Apologia Analysis

The first factor described by Ware and Linkugel in the speech of self-defense is denial. Kennedy had many accusations to acknowledge, one of which included the idea of Catholicism and loyalty. While not explicitly claiming a denial, Kennedy does address the sort of behavior that his opponents were suggesting as well as how it would be wrong for people to place such labels and ideas upon him.

"...This is the kind of America I fought for in the South Pacific, and the kind my brother died for in Europe. No one suggested then that we might have a divided loyalty, that we did not believe in liberty, or that we belonged to a disloyal group that threatened – I quote – 'the freedoms for which our forefathers died.'"

Kennedy specifically recognized the argument that was being made. This segment of his address attempts to deny the idea that a Catholic would be fragmented in his loyalties. It was an important accusation to confront and Kennedy used the military as the framework for the denial. Would anyone dare accuse a U.S. veteran of being disloyal to the nation, especially one whose brother sacrificed himself in defending liberty and America? If the accusations would not hold up at the time that Kennedy was in the military, he asks the audience why the accusations should be supported at the time that Kennedy was running for president.

Another specific idea Kennedy had to address was that of the Vatican obtaining influence over American politics. Kennedy's response not only shows an example of denial but of transcendence as well.

I believe in an America that is officially neither Catholic, Protestant, nor Jewish; where no public official either requests or accept instructions on public policy from the Pope, the National Council of Churches or any other ecclesiastical source; where no religious body seeks to impose its will directly or indirectly upon the general populace or the public acts of its officials, and where religious liberty is so indivisible than an act against one church is treated as an act against all.

Although simple enough to understand, let us look at the factor of denial as created by Ware and Linkugel: "Denial consists of the simple disavowal by the speaker of any participation in, relationship to, or positive sentiment toward whatever it is that repels the audience" (419). In this passage, Kennedy specifically denies the claim that as a Catholic he would allow a religious leader like the Pope or any other official to direct his actions. This was one of the main fears in the minds of the Protestant ministers that received Kennedy's speech. Although not all would believe him, Kennedy made it clear that the fear of a Church-ran state was one that he shared. In this statement he conveyed an unambiguous separation between himself and any positive sentiment towards an America that was influenced by religion.

Kennedy concludes the statement with a reference to religious liberty and in doing so engages in the factor of transcendence. Kennedy does two things in that statement. The first is that in recognizing religious liberty as fundamental to the ideal America, he makes those who criticize his religion not merely attackers of Catholicism but attackers of all those who participate in any organized expression of faith and spirituality, regardless of specific religion. At a gathering of Protestant ministers, Kennedy strikes a chord when he advances this idea.

Secondly, and perhaps more important to Kennedy, he is once again guiding the audience towards a new interpretation of the attacks made against him. In this case, the audience is led toward an interpretation that is less direct and more general. When religious liberty is at stake and the effects are much more broad and far-reaching, the audience is compelled to see Kennedy in a more positive light because he is transformed into the target of religious intolerants, not one who, as the religious intolerants would advocate, seeks to establish religious corruption in America.

Bolstering is another factor that Kennedy uses in his address. Ware and Linkugel mention that "a speaker attempts to identify himself with something viewed favorably by the audience" when he bolsters (420). There is something in Kennedy's character itself that seems to ask the make the audience want to identify him with something favorable, influenced mainly by his dress and persona. Halberstam writes that television "was creating a new role for [Kennedy] as a politician. He was becoming a star. He had, for television and particulary for that era before people became suspicious of glamour, stat quality. The excitement he created on television helped him enormously with print. He was dashing, he had an air of mystery...[The Kennedys] were star-crossed. They were handsome and had handsome wives. Actors and actresses and great athletes and astronauts wanted to be around them" (325). In this way, Kennedy's personality and air time and aspects of his persona that bolster for him.

In a different manner, Kennedy bolsters when he tries to invoke the memory of his past policies which exhibited a clear separation of church and state.

"I ask you tonight... to judge me on the basis of 14 years in the Congress, on my declared stands against an Ambassador to the Vatican, against unconstitutional aid to parochial schools, and against any boycott of the public schools – which I myself attended."

In this statement, Kennedy is not trying to obliterate from memory any instance of attending a Catholic church. In bringing these previous situations to mind, Kennedy is ultimately leading the audience by the hand to a different frame of mind, to a different situation that must be considered. He should not be judged on the accusations made, but rather should be judged on these positive circumstances that he has been in and that the specific audience, a group of Protestant ministers, agrees with: separation of his politics from the Catholic Church.

Kennedy then generalizes some of the accusations made and a transformative defense, differentiation, is made. He does not dismiss the kategoria completely; instead, while he denies the accusations, he also, and more importantly, points out flaws of the kategoria and again forces the audience to perceive him in a different light.

"And instead of doing this, do not judge me on the basis of these pamphlets and publications we all have seen that carefully select quotations out of context from the statements of Catholic church leaders, usually in other countries, frequently in other centuries, and rarely relevant to any situation here. And always omitting, of course, the statement of the American Bishops in 1948 which strongly endorsed Church-State separation, and which more nearly reflects the views of almost every American Catholic. I do not consider these other quotations binding upon my public acts. Why should you?"

This segment, while appearing directly after an instance of bolstering, is an example of differentiation. In this instance, Kennedy is taking what the audience already knows and creating a new interpretation of the accusations. Because the accusations lack substantial claims against him, Kennedy points out the flaws in the accusation and in doing so differentiates the new interpretation of the events from the old. The audience and anyone listening is supposed to be led towards a new interpretation, one in which Kennedy comes out on top of the now-apparently ignorant and irrelevant accusations made against him.

Another segment of Kennedy's address that should be noted is the one that deals with the nature of the accusations and the factor of transcendence that Kennedy uses in explaining the underlying dangers in the kategoria.

"For while this year it may be a Catholic against whom the finger of suspicion is pointed, in other years it has been—and may someday be again—a Jew, or a Quaker, or a Unitarian, or a Baptist. It was Virginia's harassment of Baptist preachers, for example, that led to Jeffersons's statute of religious freedom. Today, I may be the victim, but tomorrow it may be you—until the whole fabric of our harmonious society is ripped apart at a time of great national peril."

Kennedy presents an unmistakable example of transcendence in this segment of his address. To better understand how he does so, it is important to look at transcendence as defined by Ware and Linkugel: "This factor [transcendence] takes in any strategy which cognitively joins some fact, sentiment, object, or relationship with some larger context within which the audience does not presently view the attribute" (422). Up to this point, the audience is clearly able to identify the accusations made against Kennedy and how they are harmful to his candidacy. However, Kennedy uses this sentiment and makes the case that ultimately it is not he who should be

worried but America. The people of the United States are unable to see the threat that is posed to their way of living that is embodied in the accusations made against Kennedy. Therefore, if

Americans are unable to see the wrongs in accusing Kennedy, they will be misguided and eventually responsible for the destruction of "our harmonious society...at a time of great national peril." Kennedy explicitly takes the accusations made against him and unites them with the fate of the nation. The audience is then left with a conscious sense of responsibility for the nation and disgrace if they continue to believe and support the accusations made against Kennedy.

In one section of Kennedy's address he uses a mixture of apologia factors, those of denial and bolstering.

"But let me say, with respect to other countries, that I am wholly opposed to the State being used by any religious group, Catholic or Protestant, to compel, prohibit, or prosecute the free exercise of any other religion. And that goes for any persecution, at any time, by anyone, in any country. And I hope that you and I condemn with equal fervor those nations which deny their Presidency to Protestants, and those which deny it to Catholics. And rather than cite the misdeeds of those who differ, I would also cite the record of the Catholic Church in such nations as France and Ireland, and the independence of such statesman as De Gaulle and Adenauer."

In denying the idea that a government should be influenced by religion, the first segment prepares the way for the next factor, where Kennedy bolsters not on his own behalf but on behalf of the Catholic Church. He shows the audience examples of regions whose church and state relationship has been a positive one and is able to do so because his bolstering is on behalf of the Church but he is still able to reap the rewards, a favorable view by the audience.

Before Kennedy ends his speech, he makes use of Ware and Linkugel's first factor of apologia, denial. Again he separates himself from any positive attitude of the idea of a state being influenced by religious leaders and he distinctively denies the claim that he would use his office for such a purpose.

"I do not speak for my church on public matters; and the church does not speak for me. Whatever issue may come before me as President, if I should be elected, on birth control, divorce, censorship, gambling or any other subject, I will make my decision in accordance with these views – in accordance with what my conscience tells me to be in the national interest, and without regard to outside religious pressure or dictates. And no power or threat of punishment could cause me to decide otherwise."

Kennedy is no longer hinting towards a conclusion that the audience should try to come to on their own; he is leaving no room for interpretation when makes this statement. Denial, one that is believed by the audience, is one of the most useful defense strategies because the accusations are no longer valid. Kennedy wants to end on a clear and distinct note, the kategoria against his character and policy have no ground.

Four Postures of Apologia

Ware and Linkugel described four postures that an apologist could fall into: absolution, vindication, explanation, and justification. In this case, however, it is hard to classify Kennedy's address as precisely one of these postures. Two of the factors of denial, bolstering, differentiation, and transcendence, usually make up one of the postures but it is clear to see that Kennedy did not necessarily stay within two factors. In fact, his apologia is one that exceeds boundaries set by Ware and Linkugel. As mentioned earlier, the address is not merely self- defense but has an element of kategoria under the guise of apologia; the accusers become the

accused. Henry writes: "Kennedy's performance at Houston revealed his rhetorical capacity to reshape his listeners' perceptions concerning the roles of accuser and accused" (163). For this reason critics should pay close attention to Kennedy's address. He clearly makes use of the factors of apologia, denial, bolstering, differentiation, and transcendence, and is able to convincingly use each factor as successfully as possible. The address effortlessly gets its point across and had an immense effect on the public at the time. His denial of the claims made against him was clear and succinct. His use of bolstering and differentiation are powerful, yet transcendence plays a major role in the address as he transforms the meanings of the claims made against him and develops them into national affairs to consider.

When most critics think of apologia, acts of misconduct or scandal usually come to mind. However, as Ryan alleged, kategoria can develop from a fear of future policies or problems that the accuser feels could happen down the road. It is not limited to specific acts that have taken place and a speaker clearing the air. Kennedy's speech shows that very influential apologias can be brought to life by the accusations of those who feel something should be said of the problems that will be brought in the future. For this reason scholars should look at artifacts such as Kennedy's address with a critical eye. The genre of apologia has been expanded upon by Ryan and others and areas of improvement are always available. The powerful and successful apologia made by Kennedy is one that the general public should examine as well. Kennedy's addressed shaped the nation at a crucial period in its history and while some citizens do not see it as their responsibility to critically examine the speeches made by past and present politicians, this criticism hopefully promotes a sense of activism in regards to the role people analyze American rhetoric that produces a significant change in public opinion.

A Theory of Image Restoration

William Benoit is helpful in understanding the impact of Kennedy's address by looking at a theory of image restoration. The first two things to understand in image restoration are that 1) communication is goal-driven, and that 2) identity maintenance is a key goal of communication. To better understand how and why communication is goal-driven, Benoit writes that "people try to achieve the goals that seem most important to them at the time they act, or to achieve the best mix of the goals that appears possible" (65). Benoit also states that people engage in behavior that will help them achieve their goals and that in certain situations, people devote time and effort to produce goal-producing discourse (66). For identity maintenance, Benoit writes that four elements – limited resources, external events, human error, and conflicting goals – combine to insure that actual or perceived wrong-doing is a recurring feature of human behavior (68).

The vulnerability one experiences from accusations leads to a threat to self-image. Benoit argues that reputation is crucial to restore because "it contributes to a healthy self-image" and because it changes the "influence process" because it negatively affects ethos. Benoit writes that "When our reputation is threatened, we feel compelled to offer explanations, defenses, justifications, rationalizations, apologies, or excuses for our behavior" (70). In a way, this is what Kennedy experienced before giving his address in Houston. In his previous addresses, Kennedy articulated his position on church and state and "in so doing, he defended his character and the policies he advocated in accordance with the dictates of an apologia. He simultaneously moved to the offense, however, charging the press with unduly emphasizing religion in the primaries. The tactic foreshadowed the technique that would serve him well in Houston in five months hence," (Henry 155-6). Kennedy had already had experience in attempting to save face – losing face was not something he could afford in his candidacy.

An attack is comprised of two components: 1) An act occurred which is undesirable, 2) You are responsible for that action (Benoit 71). Although Kennedy believed that his Catholicism would not interfere with his presidency, the audience believed that he would be responsible for the Vatican influencing American politics. Because these two elements of attack were present, and Kennedy recognized that people believed that he was at fault, it was expected of him to employ image restoration discourse.

Benoit writes that when it comes to attacks, the first line of defense is denial. Benoit describes a variant of denial, explaining how some suggest applying guilt to another person. "This strategy may well be more effective than simple denial, for two reasons: First, it provides a target for any ill will the audience may feel, and this ill feeling may be shifted away from the accused. Second, it answers the question that may make the audience hesitate to accept a simple denial: 'Who did it?'" (76). Kennedy employs this strategy when he asks the audience not to judge him "on the basis of these pamphlets and publications we all have seen that carefully select quotations out of context from the statements of Catholic church leaders, usually in other countries, frequently in other centuries, and rarely relevant to any situation here." Kennedy attempts to show the audience that their belief that he would be responsible for a Catholic influence on the presidency is not based on his actions, but instead the blame is placed on the anti-Kennedy voices that had been distributing the defaming pamphlets.

Another line of defense Benoit describes is to evade responsibility. There are four strategies a rhetor can use to evade responsibility, the fourth of which is most relevant to Kennedy’s addressing. The first is by suggesting that something else provoked the wrongful action. A second strategy is pleading lack of information about or control over important factors in the situation. A third strategy is to say accidents led to uncontrollable situations. But the fourth possibility is “for the actor to suggest that performance of the action in question may be justified on the basis of motives or intentions...Here the wrongful act is not denied, yet the audience is asked not to hold the actor fully responsible because it was done with good, rather than evil, intentions. People who do bad while trying to do good are usually not blamed as much as those intend to do bad,” (76-7). Kennedy did not deny that he was Catholic and stated that “I do not intend to apologize for these views to my critics of either Catholic or Protestant faith; nor do I intend to disavow either my views or my church in order to win this election.” What’s more is that Kennedy repeatedly states that his position and policies stem from his conscience and the concern for the national interest – these are the motives behind his actions, and if his accusers are quick to denigrate Kennedy, it is based on nothing but his good intentions.

Reducing offensiveness is another aspect of image restoration that Benoit describes and it incorporates research from many other scholars. It is best to examine the six variants individually to appreciate how Kennedy’s address to Houston succeeded in reducing offensiveness.

The first strategy or reducing offensiveness is bolstering, a feature or image restoration previously examined and it is simply strengthening the audience’s positive affect for the rhetor, relating positive attributes they posses or positive actions they have performed in the past. Kennedy does this in a number of ways, as already described. One of these instances is when Kennedy calls to mind how he fought in the South Pacific, and that no one had suggested then that he and his brother who died belonged to a disloyal group that did not respect the freedom that Americans had fought for.

Another strategy of reducing offensiveness is minimization where the rhetor attempts to convince the audience that the negative effects or the act itself are really not as bad as they are perceived to be. When describing the tracts and pamphlets that attempted to harm him, Kennedy addresses them but then dismisses them just as quickly when he says, “I do not consider these other quotations binding upon my public acts. Why should you?”

Differentiation is another way to reduce offensiveness and with this strategy the rhetor attempts to make the bad accusations seem less offensive by distinguishing them from worse actions. Kennedy’s biggest fault is being baptized Catholic, and in this sense, he attempts to make others seem as though their religion could be worse by comparison because it leads to religious intolerance while Kennedy continues to reiterate that he condemns “those nations which deny their

Presidency to Protestants, and those which deny it to Catholics."

Transcendence is simply placing the act in a different context. To reduce offensiveness, Kennedy states that his Catholicism should not be seen in light of the poor examples of religious tolerance from the Catholic Church. The right context to view his Catholicism, Kennedy argues, is found in "the statement of the American Bishops in 1948 which strongly endorsed Church- State separation and which more nearly reflects the views of almost every American Catholic."

Another way to reduce effectiveness is attacking one's accuser, because if the credibility of the accuser can be reduced, then the damage incurred is also diminished. Kennedy manages to argue that his attackers are the ones who continue to instigate religious intolerance and that if it continues, "then it is the whole nation that will be the loser, in the eyes of Catholics and non-Catholics around the world, in the eyes of history, and in the eyes of our own people." This is a deep attack on the Kennedy's accusers, and frames them in a much worse light than they have framed him.

Compensation is the last strategy to reduce offensiveness in which the accused offers to compensate the victim in a way that will make up for the negative effects. Kennedy does not believe that there are any negative effects of his Catholicism, especially since it would not negatively impact his Presidency. Because of this, all that he has to offer is much more substantial than the negative impacts that might occur. But he especially promises to always serve the country according to his conscience and with the national interest in mind.

Corrective action and mortification are two aspects of image restoration that, while useful to consider, are not applicable because Kennedy's address does not state how he would restore the state of affairs before the supposed misdeed occurred and does not admit wrongdoing and ask for forgiveness because he does not feel he has truly committed a bad deed. This is where it is important to recognize the speech as that of self-defense, but also one that has its own accusations. Henry writes: "Having dealt with both the issues that would likely arise and the tactics for establishing the strongest position, [Kennedy] was prepared to transform a heavily problematic situation into a position of strength. Kennedy converted a defense or apologia into accusatory discourse. The issue ultimately became not his Catholicism, but the place of religious tolerance, fairness, and charity in American society. Where the motive of purification might have under-girded pure apologia, it is evident that Kennedy's discourse as much aimed to affirm an image of his detractors as to dispel negative perceptions of himself. Both motives merged in a blending of kategoria and apologia in creating appropriate discourse for the rhetorical situation" (169).

Conclusion

Kennedy's success in the campaign demonstrates the success of the pivotal address which would shape the rest of his candidacy. The team surrounding Kennedy recognized the significance of the address, making it was the single most rebroadcast address of the campaign, and the mass media played a vital role in Kennedy’s success. In recognizing the extreme weight of public opinion against Kennedy and his Catholicism, one can appreciate the address in light the attacks. While some of the attacks may seem unfounded, Catholicism has never ceased to garner skepticism and criticism. And yet Kennedy found himself in the perfect position to address the religious issue. Recognizing the possibility to open the door to the presidency, Kennedy knew he would address his Catholicism openly. With votes in mind and the intimidating task of significantly affecting public opinion to achieve the presidency, Kennedy’s address—exceptional in its factors of self-defense and the attacks it would produce—was a success and a brilliant example of presidential rhetoric finding the means of persuasion in daunting circumstances.

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La Puente 35

THE CITY UPON A HILL SPEECH - TRANSCRIPT

January 9, 1961

I have welcomed this opportunity to address this historic body, and, through you, the people of Massachusetts to whom I am so deeply indebted for a lifetime of friendship and trust.

For fourteen years I have placed my confidence in the citizens of Massachusetts--and they have generously responded by placing their confidence in me.

Now, on the Friday after next, I am to assume new and broader responsibilities. But I am not here to bid farewell to Massachusetts.

For forty-three years--whether I was in London, Washington, the South Pacific, or elsewhere--this has been my home; and, God willing, wherever I serve this shall remain my home.

It was here my grandparents were born--it is here I hope my grandchildren will be born.

I speak neither from false provincial pride nor artful political flattery. For no man about to enter high office in this country can ever be unmindful of the contribution this state has made to our national greatness.

Its leaders have shaped our destiny long before the great republic was born. Its principles have guided our footsteps in times of crisis as well as in times of calm. Its democratic institutions--including this historic body--have served as beacon lights for other nations as well as our sister states.

For what Pericles said to the Athenians has long been true of this commonwealth: "We do not imitate--for we are a model to others."

And so it is that I carry with me from this state to that high and lonely office to which I now succeed more than fond memories of firm friendships. The enduring qualities of Massachusetts--the common threads woven by the Pilgrim and the Puritan, the fisherman and the farmer, the Yankee and the immigrant--will not be and could not be forgotten in this nation's executive mansion.

They are an indelible part of my life, my convictions, my view of the past, and my hopes for the future.

Allow me to illustrate: During the last sixty days, I have been at the task of constructing an administration. It has been a long and deliberate process. Some have counseled greater speed. Others have counseled more expedient tests.

But I have been guided by the standard John Winthrop set before his shipmates on the flagship Arbella three hundred and thirty-one years ago, as they, too, faced the task of building a new government on a perilous frontier.

"We must always consider," he said, "that we shall be as a city upon a hill--the eyes of all people are upon us."

Today the eyes of all people are truly upon us--and our governments, in every branch, at every level, national, state and local, must be as a city upon a hill--constructed and inhabited by men aware of their great trust and their great responsibilities.

For we are setting out upon a voyage in 1961 no less hazardous than that undertaken by the Arabella in 1630. We are committing ourselves to tasks of statecraft no less awesome than that of governing the Massachusetts Bay Colony, beset as it was then by terror without and disorder within.

History will not judge our endeavors--and a government cannot be selected--merely on the basis of color or creed or even party affiliation. Neither will competence and loyalty and stature, while essential to the utmost, suffice in times such as these.

For of those to whom much is given, much is required. And when at some future date the high court of history sits in judgment on each one of us--recording whether in our brief span of service we fulfilled our responsibilities to the state--our success or failure, in whatever office we may hold, will be measured by the answers to four questions:

First, were we truly men of courage--with the courage to stand up to one's enemies--and the courage to stand up, when necessary, to one's associates--the courage to resist public pressure, as well as private greed?

Secondly, were we truly men of judgment--with perceptive judgment of the future as well as the past--of our own mistakes as well as the mistakes of others--with enough wisdom to know that we did not know, and enough candor to admit it?

Third, were we truly men of integrity--men who never ran out on either the principles in which they believed or the people who believed in them--men who believed in us--men whom neither financial gain nor political ambition could ever divert from the fulfillment of our sacred trust?

Finally, were we truly men of dedication--with an honor mortgaged to no single individual or group, and compromised by no private obligation or aim, but devoted solely to serving the public good and the national interest.

Courage--judgment--integrity--dedication--these are the historic qualities of the Bay Colony and the Bay State--the qualities which this state has consistently sent to this chamber on Beacon Hill here in Boston and to Capitol Hill back in Washington.

And these are the qualities which, with God's help, this son of Massachusetts hopes will characterize our government's conduct in the four stormy years that lie ahead.

Humbly I ask His help in that undertaking--but aware that on earth His will is worked by men. I ask for your help and your prayers, as I embark on this new and solemn journey.
Content Editor Category

JOHN F. KENNEDY

35th President of the United States: 1961 - 1963

INAUGURAL ADDRESS

John F. Kennedy's Inaugural Address, 1961
A Spotlight on a Primary Source by John F. Kennedy
On January 20, 1961, John F. Kennedy was sworn in as the thirty-fifth President of the United States. His short, fourteen-minute inaugural address is best remembered for a single line: "My fellow Americans: ask not what your country can do for you—ask what you can do for your country." This call to public service resonated with what JFK called the "new generation of Americans—born in this century, tempered by war, disciplined by a hard and bitter peace, proud of our ancient heritage." It is virtually the only part of the speech to address solely domestic matters and initiatives. The balance of the speech places the United States at the center of worldwide action in facing the challenges of the Cold War in particular, in strong declarative sentences and emotional

appeals:

Now the trumpet summons us again—not as a call to bear arms, though arms we need—not as a call to battle, though embattled we are—but a call to bear the burden of a long twilight struggle, year in and year out, "rejoicing in hope, patient in tribulation"—a struggle against the common enemies of man: tyranny, poverty, disease and war itself.

EXCERPTS

John F. Kennedy's Inaugural Address, January 20, 1961 (John F. Kennedy Presidential Library and Museum, National Archives and Records Administration, http://www.jfklibrary.org/Asset-Viewer/BqXIEM9F4024ntFl7SVAjA.aspx)

Vice President Johnson, Mr. Speaker, Mr. Chief Justice, President Eisenhower, Vice president Nixon, President Truman, Reverend Clergy, fellow citizens:

We observe today not a victory of party but a celebration of freedom--symbolizing an end as well as a beginning--signifying renewal as well as change. For I have sworn before you and Almighty God the same solemn oath our forebears prescribed nearly a century and three quarters ago.

The world is very different now. For man holds in his mortal hands the power to abolish all forms of human poverty and all forms of human life. And yet the same revolutionary beliefs for which our forebears fought are still at issue around the globe--the belief that the rights of man come not from the generosity of the state but from the hand of God.

We dare not forget today that we are the heirs of that first revolution. Let the word go forth from this time and place, to friend and foe alike, that the torch has been passed to a new generation of Americans--born in this century, tempered by war, disciplined by a hard and bitter peace, proud of our ancient heritage--and unwilling to witness or permit the slow undoing of those human rights to which this nation has always been committed, and to which we are committed today at home and around the world.

Let every nation know, whether it wishes us well or ill, that we shall pay any price, bear any burden, meet any hardship, support any friend, oppose any foe to assure the survival and the success of liberty.

This much we pledge--and more.

To those old allies whose cultural and spiritual origins we share, we pledge the loyalty of faithful friends. United, there is little we cannot do in a host of cooperative ventures. Divided, there is little we can do--for we dare not meet a powerful challenge at odds and split asunder.

To those new states whom we welcome to the ranks of the free, we pledge our word that one form of colonial control shall not have passed away merely to be replaced by a far more iron tyranny. We shall not always expect to find them supporting our view. But we shall always hope to find them strongly supporting their own freedom-and to remember that, in the past, those who foolishly sought power by riding the back of the tiger ended up inside.

To those peoples in the huts and villages of half the globe struggling to break the bonds of mass misery, we pledge our best efforts to help them help themselves, for whatever period is required--not because the communists may be doing it, not because we seek their votes, but because it is right. If a free society cannot help the many who are poor, it cannot save the few who are rich.

To our sister republics south of our border, we offer a special pledge--to convert our good words into good deeds--in a new alliance for progress--to assist free men and free governments in casting off the chains of poverty. But this peaceful revolution of hope cannot become the prey of hostile powers. Let all our neighbors know that we shall join with them to oppose aggression or subversion anywhere in the Americas. And let every other power know that this Hemisphere intends to remain the master of its own house.

To that world assembly of sovereign states, the United Nations, our last best hope in an age where the instruments of war have far outpaced the instruments of peace, we renew our pledge of support--to prevent it from becoming merely a forum for invective--to strengthen its shield of the new and the weak--and to enlarge the area in which its writ may run.

Finally, to those nations who would make themselves our adversary, we offer not a pledge but a request: that both sides begin anew the quest for peace, before the dark powers of destruction unleashed by science engulf all humanity in planned or accidental self-destruction.

We dare not tempt them with weakness. For only when our arms are sufficient beyond doubt can we be certain beyond doubt that they will never be employed.

But neither can two great and powerful groups of nations take comfort from our present course--both sides overburdened by the cost of modern weapons, both rightly alarmed by the steady spread of the deadly atom, yet both racing to alter that uncertain balance of terror that stays the hand of mankind's final war.

So let us begin anew--remembering on both sides that civility is not a sign of weakness, and sincerity is always subject to proof. Let us never negotiate out of fear. But let us never fear to negotiate.

Let both sides explore what problems unite us instead of belaboring those problems which divide us.

Let both sides, for the first time, formulate serious and precise proposals for the inspection and control of arms--and bring the absolute power to destroy other nations under the absolute control of all nations.

Let both sides seek to invoke the wonders of science instead of its terrors. Together let us explore the stars, conquer the deserts, eradicate disease, tap the ocean depths and encourage the arts and commerce.

Let both sides unite to heed in all corners of the earth the command of Isaiah--to "undo the heavy burdens . . . (and) let the oppressed go free."

And if a beach-head of cooperation may push back the jungle of suspicion, let both sides join in creating a new endeavor, not a new balance of power, but a new world of law, where the strong are just and the weak secure and the peace preserved.

All this will not be finished in the first one hundred days. Nor will it be finished in the first one thousand days, nor in the life of this Administration, nor even perhaps in our lifetime on this planet. But let us begin.

In your hands, my fellow citizens, more than mine, will rest the final success or failure of our course. Since this country was founded, each generation of Americans has been summoned to give testimony to its national loyalty. The graves of young Americans who answered the call to service surround the globe.

Now the trumpet summons us again-not as a call to bear arms, though arms we need--not as a call to battle, though embattled we are--but a call to bear the burden of a long twilight struggle, year in and year out, "rejoicing in hope, patient in tribulation"--a struggle against the common enemies of man: tyranny, poverty, disease and war itself.

Can we forge against these enemies a grand and global alliance, North and South, East and West, that can assure a more fruitful life for all mankind? Will you join in that historic effort?

In the long history of the world, only a few generations have been granted the role of defending freedom in its hour of maximum danger. I do not shrink from this responsibility--I welcome it. I do not believe that any of us would exchange places with any other people or any other generation. The energy, the faith, the devotion which we bring to this endeavor will light our country and all who serve it--and the glow from that fire can truly light the world.

And so, my fellow Americans: ask not what your country can do for you--ask what you can do for your country.

My fellow citizens of the world: ask not what America will do for you, but what together we can do for the freedom of man.

Finally, whether you are citizens of America or citizens of the world, ask of us here the same high standards of strength and sacrifice which we ask of you. With a good conscience our only sure reward, with history the final judge of our deeds, let us go forth to lead the land we love, asking His blessing and His help, but knowing that here on earth God's work must truly be our own.

Note: The President spoke at 12:52 p.m. from a platform erected at the east front of the Capitol. Immediately before the address the oath of office was administered by Chief Justice Warren.

The President's opening words "Reverend Clergy" referred to His Eminence Richard Cardinal Cushing, Archbishop of Boston; His Eminence Archbishop Iakovos, head of the Greek Archdiocese of North and South America; the Reverend Dr. John Barclay, pastor of the Central Christian Church, Austin, Tex.; and Rabbi Dr. Nelson Glueck, President of the Hebrew Union College, Cincinnati, Ohio.

John F. Kennedy, Inaugural Address Online by Gerhard Peters and John T. Woolley, The American Presidency Project https://www.presidency.ucsb.edu/node/234470

A full transcript is available **here** as a pdf.
https://www.gilderlehrman.org/sites/default/files/inline-pdfs/T-Kennedy%20Inaugural.pdf

QUESTIONS FOR DISCUSSION

Read the introduction, view the photo image, and read the transcript of John F. Kennedy's inaugural address. Then apply your knowledge of American history to answer the following questions:

1. **Identify those segments of President Kennedy's Inaugural Address where he acknowledged the significant dangers posed by the arms race and the nuclear threat. How did he explain his concerns?**
2. **Beginning with the paragraph "To those old allies," select two paragraphs where JFK defined our relationship with another nation and / or region. Then, list and explain the specific pledge he held out to the nation and / or region you selected.**
3. **How can you explain President Kennedy's emphasis on international concerns while at the time of his inauguration the United States was facing serious internal issues regarding poverty and civil rights?**
4. **How did President Kennedy urge the citizens of the United States to rise to the challenges that faced mid-twentieth-century America?**

A printer-friendly version is available **here**.
https://www.gilderlehrman.org/sites/default/files/inline-pdfs/Kennedy%20Inaugural.FPS_.pdf

THE PRESIDENT AND THE PRESS: ADDRESS BEFORE THE AMERICAN NEWSPAPER PUBLISHERS ASSOCIATION, APRIL 27, 1961

President John F. Kennedy
Waldorf-Astoria Hotel, New York City
April 27, 1961

Mr. Chairman, ladies and gentlemen:

I appreciate very much your generous invitation to be here tonight.

You bear heavy responsibilities these days and an article I read some time ago reminded me of how particularly heavily the burdens of present day events bear upon your profession.

You may remember that in 1851 the New York Herald Tribune under the sponsorship and publishing of Horace Greeley, employed as its London correspondent an obscure journalist by the name of Karl Marx.

We are told that foreign correspondent Marx, stone broke, and with a family ill and undernourished, constantly appealed to Greeley and managing editor Charles Dana for an increase in his munificent salary of $5 per installment, a salary which he and Engels ungratefully labeled as the "lousiest petty bourgeois cheating."

But when all his financial appeals were refused, Marx looked around for other means of livelihood and fame, eventually terminating his relationship with the Tribune and devoting his talents full time to the cause that would bequeath the world the seeds of Leninism, Stalinism, revolution and the cold war.

If only this capitalistic New York newspaper had treated him more kindly; if only Marx had remained a foreign correspondent, history might have been different. And I hope all publishers will bear this lesson in mind the next time they receive a poverty-stricken appeal for a small increase in the expense account from an obscure newspaper man.

I have selected as the title of my remarks tonight "The President and the Press." Some may suggest that this would be more naturally worded "The President Versus the Press." But those are not my sentiments tonight.

It is true, however, that when a well-known diplomat from another country demanded recently that our State Department repudiate certain newspaper attacks on his colleague it was unnecessary for us to reply that this Administration was not responsible for the press, for the press had already made it clear that it was not responsible for this Administration.

Nevertheless, my purpose here tonight is not to deliver the usual assault on the so-called one party press. On the contrary, in recent months I have rarely heard any complaints about political bias in the press except from a few Republicans. Nor is it my purpose tonight to discuss or defend the televising of Presidential press conferences. I think it is highly beneficial to have some 20,000,000 Americans regularly sit in on these conferences to observe, if I may say so, the incisive, the intelligent and the courteous qualities displayed by your Washington correspondents.

Nor, finally, are these remarks intended to examine the proper degree of privacy which the press should allow to any President and his family.

If in the last few months your White House reporters and photographers have been attending church services with regularity, that has surely done them no harm.

On the other hand, I realize that your staff and wire service photographers may be complaining that they do not enjoy the same green privileges at the local golf courses that they once did.

It is true that my predecessor did not object as I do to pictures of one's golfing skill in action. But neither on the other hand did he ever bean a Secret Service man.

My topic tonight is a more sober one of concern to publishers as well as editors.

I want to talk about our common responsibilities in the face of a common danger. The events of recent weeks may have helped to illuminate that challenge for some; but the dimensions of its threat have loomed large on the horizon for many years. Whatever our hopes may be for the future--for reducing this threat or living with it--there is no escaping either the gravity or the totality of its challenge to our survival and to our security--a challenge that confronts us in unaccustomed ways in every sphere of human activity.

This deadly challenge imposes upon our society two requirements of direct concern both to the press and to the President--two requirements that may seem almost contradictory in tone, but which must be reconciled and fulfilled if we are to meet this national peril. I refer, first, to the need for a far greater public information; and, second, to the need for far greater official secrecy.

I

The very word "secrecy" is repugnant in a free and open society; and we are as a people inherently and historically opposed to secret societies, to secret oaths and to secret proceedings. We decided long ago that the dangers of excessive and unwarranted concealment of pertinent facts far outweighed the dangers which are cited to justify it. Even today, there is little value in opposing the threat of a closed society by imitating its arbitrary restrictions. Even today, there is little value in insuring the survival of our nation if our traditions do not survive with it. And there is very grave danger that an announced need for increased security will be seized upon by those anxious to expand its meaning to the very limits of official censorship and concealment. That I do not intend to permit to the extent that it is in my control. And no official of my Administration, whether his rank is high or low, civilian or military, should interpret my words here tonight as an excuse to censor the news, to stifle dissent, to cover up our mistakes or to withhold from the press and the public the facts they deserve to know.

But I do ask every publisher, every editor, and every newsman in the nation to reexamine his own standards, and to recognize the nature of our country's peril. In time of war, the government and the press have customarily joined in an effort based largely on self-discipline, to prevent unauthorized disclosures to the enemy. In time of "clear and present danger," the courts have held that even the privileged rights of the First Amendment must yield to the public's need for national security.

Today no war has been declared--and however fierce the struggle may be, it may never be declared in the traditional fashion. Our way of life is under attack. Those who make themselves our enemy are advancing around the globe. The survival of our friends is in danger. And yet no war has been declared, no borders have been crossed by marching troops, no missiles have been fired.

If the press is awaiting a declaration of war before it imposes the self-discipline of combat conditions, then I can only say that no war ever posed a greater threat to our security. If you are awaiting a finding of "clear and present danger," then I can only say that the danger has never been more clear and its presence has never been more imminent.

It requires a change in outlook, a change in tactics, a change in missions--by the government, by the people, by every businessman or labor leader, and by every newspaper. For we are opposed around the world by a monolithic and ruthless conspiracy that relies primarily on covert means for expanding its sphere of influence--on infiltration instead of invasion, on subversion instead of elections, on intimidation instead of free choice, on guerrillas by night instead of armies by day. It is a system which has conscripted vast human and material resources into the building of a tightly knit, highly efficient machine that combines military, diplomatic, intelligence, economic, scientific and political operations.

Its preparations are concealed, not published. Its mistakes are buried, not headlined. Its dissenters are silenced, not praised. No expenditure is questioned, no rumor is printed, no secret is revealed. It conducts the Cold War, in short, with a war-time discipline no democracy would ever hope or wish to match.

Nevertheless, every democracy recognizes the necessary restraints of national security--and the question remains whether those restraints need to be more strictly observed if we are to oppose this kind of attack as well as outright invasion.

For the facts of the matter are that this nation's foes have openly boasted of acquiring through our newspapers information they would otherwise hire agents to acquire through theft, bribery or espionage; that details of this nation's covert preparations to counter the enemy's covert operations have been available to every newspaper reader, friend and foe alike; that the size, the strength, the location and the nature of our forces and weapons, and our plans and strategy for their use, have all been pinpointed in the press and other news media to a degree sufficient to satisfy any foreign power; and that, in at least in one case, the publication of details concerning a secret mechanism whereby satellites were followed required its alteration at the expense of considerable time and money.

The newspapers which printed these stories were loyal, patriotic, responsible and well-meaning. Had we been engaged in open warfare, they undoubtedly would not have published such items. But in the absence of open warfare, they recognized only the tests of journalism and not the tests of national security. And my question tonight is whether additional tests should not now be adopted.

The question is for you alone to answer. No public official should answer it for you. No governmental plan should impose its restraints against your will. But I would be failing in my duty to the nation, in considering all of the responsibilities that we now bear and all of the means at hand to meet those responsibilities, if I did not commend this problem to your attention, and urge its thoughtful consideration.

On many earlier occasions, I have said--and your newspapers have constantly said--that these are times that appeal to every citizen's sense of sacrifice and self-discipline. They call out to every citizen to weigh his rights and comforts against his obligations to the common good. I cannot now believe that those citizens who serve in the newspaper business consider themselves exempt from that appeal.

I have no intention of establishing a new Office of War Information to govern the flow of news. I am not suggesting any new forms of censorship or any new types of security classifications. I have no easy answer to the dilemma that I have posed, and would not seek to impose it if I had one. But I am asking the members of the newspaper profession and the industry in this country to reexamine their own responsibilities, to consider the degree and the nature of the present danger, and to heed the duty of self-restraint which that danger imposes upon us all.

Every newspaper now asks itself, with respect to every story: "Is it news?" All I suggest is that you add the question: "Is it in the interest of the national security?" And I hope that every group in America--unions and businessmen and public officials at every level-- will ask the same question of their endeavors, and subject their actions to the same exacting tests.

And should the press of America consider and recommend the voluntary assumption of specific new steps or machinery, I can assure you that we will cooperate whole-heartedly with those recommendations.

Perhaps there will be no recommendations. Perhaps there is no answer to the dilemma faced by a free and open society in a cold and secret war. In times of peace, any discussion of this subject, and any action that results, are both painful and without precedent. But this is a time of peace and peril which knows no precedent in history.

II

It is the unprecedented nature of this challenge that also gives rise to your second obligation--an obligation which I share. And that is our obligation to inform and alert the American people--to make certain that they possess all the facts that they need, and understand them as well--the perils, the prospects, the purposes of our program and the choices that we face.

No President should fear public scrutiny of his program. For from that scrutiny comes understanding; and from that understanding comes support or opposition. And both are necessary. I am not asking your newspapers to support the Administration, but I am asking your help in the tremendous task of informing and alerting the American people. For I have complete confidence in the response and dedication of our citizens whenever they are fully informed.

I not only could not stifle controversy among your readers--I welcome it. This Administration intends to be candid about its errors; for as a wise man once said: "An error does not become a mistake until you refuse to correct it." We intend to accept full responsibility for our errors; and we expect you to point them out when we miss them.

Without debate, without criticism, no Administration and no country can succeed--and no republic can survive. That is why the Athenian lawmaker Solon decreed it a crime for any citizen to shrink from controversy. And that is why our press was protected by the First Amendment-- the only business in America specifically protected by the Constitution- -not primarily to amuse and entertain, not to emphasize the trivial and the sentimental, not to simply "give the public what it wants"--but to inform, to arouse, to reflect, to state our dangers and our opportunities, to indicate our crises and our choices, to lead, mold, educate and sometimes even anger public opinion.

This means greater coverage and analysis of international news--for it is no longer far away and foreign but close at hand and local. It means greater attention to improved understanding of the news as well as improved transmission. And it means, finally, that government at all levels, must meet its obligation to provide you with the fullest possible information outside the narrowest limits of national security--and we intend to do it.

III

It was early in the Seventeenth Century that Francis Bacon remarked on three recent inventions already transforming the world: the compass, gunpowder and the printing press. Now the links between the nations first forged by the compass have made us all citizens of the world, the hopes and threats of one becoming the hopes and threats of us all. In that one world's efforts to live together, the evolution of gunpowder to its ultimate limit has warned mankind of the terrible consequences of failure.

And so it is to the printing press--to the recorder of man's deeds, the keeper of his conscience, the courier of his news--that we look for strength and assistance, confident that with your help man will be what he was born to be: free and independent.

The Decision to Go to the Moon: President John F. Kennedy’s May 25, 1961 Speech before a Joint Session of Congress

CONTENTS

- Excerpt from the "Special Message to the Congress on Urgent National Needs"
- Section IX: Space:

On May 25, 1961, President John F. Kennedy announced before a special joint session of Congress the dramatic and ambitious goal of sending an American safely to the Moon before the end of the decade. A number of political factors affected Kennedy’s decision and the timing of it. In general, Kennedy felt great pressure to have the United States “catch up to and overtake” the Soviet Union in the “space race.” Four years after the Sputnik shock of 1957, the cosmonaut Yuri Gagarin had become the first human in space on April 12, 1961, greatly embarrassing the U.S. While Alan Shepard became the first American in space on May 5, he only flew on a short suborbital flight instead of orbiting the Earth, as Gagarin had done. In addition, the Bay of Pigs fiasco in mid-April put unquantifiable pressure on Kennedy. He wanted to announce a program that the U.S. had a strong chance at achieving before the Soviet Union. After consulting with Vice President Johnson, NASA Administrator James Webb, and other officials, he concluded that landing an American on the Moon would be a very challenging technological feat, but an area of space exploration in which the U.S. actually had a potential lead. Thus the cold war is the primary contextual lens through which many historians now view Kennedy’s speech.

The decision involved much consideration before making it public, as well as enormous human efforts and expenditures to make what became Project Apollo a reality by 1969. Only the construction of the Panama Canal in modern peacetime and the Manhattan Project in war were comparable in scope. NASA's overall human spaceflight efforts were guided by Kennedy's speech; Projects Mercury (at least in its latter stages), Gemini, and Apollo were designed to execute Kennedy's goal. His goal was achieved on July 20, 1969, when Apollo 11 commander Neil Armstrong stepped off the Lunar Module's ladder and onto the Moon's surface.

Excerpt from the "Special Message to the Congress on Urgent National Needs" President John F. Kennedy

Delivered in person before a joint session of Congress May 25, 1961

Section IX: Space:

Finally, if we are to win the battle that is now going on around the world between freedom and tyranny, the dramatic achievements in space which occurred in recent weeks should have made clear to us all, as did the Sputnik in 1957, the impact of this adventure on the minds of men everywhere, who are attempting to make a determination of which road they should take. Since early in my term, our efforts in space have been under review. With the advice of the Vice President, who is Chairman of the National Space Council, we have examined where we are strong and where we are not, where we may succeed and where we may not. Now it is time to take longer strides—time for a great new American enterprise—time for this nation to take a clearly leading role in space achievement, which in many ways may hold the key to our future on earth.

I believe we possess all the resources and talents necessary. But the facts of the matter are that we have never made the national decisions or marshaled the national resources required for such leadership. We have never specified long-range goals on an urgent time schedule, or managed our resources and our time so as to insure their fulfillment.

Recognizing the head start obtained by the Soviets with their large rocket engines, which gives them many months of lead-time, and recognizing the likelihood that they will exploit this lead for some time to come in still more impressive successes, we nevertheless are required to make new efforts on our own. For while we cannot guarantee that we shall one day be first, we can guarantee that any failure to make this effort will make us last. We take an additional risk by making it in full view of the world, but as shown by the feat of astronaut Shepard, this very risk enhances our stature when we are successful. But this is not merely a race. Space is open to us now; and our eagerness to share its meaning is not governed by the efforts of others. We go into space because whatever mankind must undertake, free men must fully share.

I therefore ask the Congress, above and beyond the increases I have earlier requested for space activities, to provide the funds which are needed to meet the following national goals:

First, I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to the earth. No single space project in this period will be more impressive to mankind, or more important for the long-range exploration of space; and none will be so difficult or expensive to accomplish. We propose to accelerate the development of the appropriate lunar space craft. We propose to develop alternate liquid and solid fuel boosters, much larger than any now being developed, until certain which is superior. We propose additional funds for other engine development and for unmanned explorations—explorations which are particularly important for one purpose which this nation will never overlook: the survival of the man who first makes this daring flight. But in a very real sense, it will not be one man going to the moon—if we make this judgment affirmatively, it will be an entire nation. For all of us must work to put him there.

Speaking to Congress and the Nation, President Kennedy said on May 25, 1961; “I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to the earth.”

Secondly, an additional 23 million dollars, together with 7 million dollars already available, will accelerate development of the Rover nuclear rocket. This gives promise of some day providing a means for even more exciting and ambitious exploration of space, perhaps beyond the moon, perhaps to the very end of the solar system itself.

Third, an additional 50 million dollars will make the most of our present leadership, by accelerating the use of space satellites for world-wide communications.

Fourth, an additional 75 million dollars—of which 53 million dollars is for the Weather Bureau—will help give us at the earliest possible time a satellite system for world-wide weather observation.

Let it be clear—and this is a judgment which the Members of the Congress must finally make—let it be clear that I am asking the Congress and the country to accept a firm commitment to a new course of action, a course which will last for many years and carry very heavy costs: 531 million dollars in fiscal ’62—an estimated seven to nine billion dollars additional over the next five years. If we are to go only half way, or reduce our sights in the face of difficulty, in my judgment it would be better not to go at all.

Now this is a choice which this country must make, and I am confident that under the leadership of the Space Committees of the Congress, and the Appropriating Committees, that you will consider the matter carefully.

It is a most important decision that we make as a nation. But all of you have lived through the last four years and have seen the significance of space and the adventures in space, and no one can predict with certainty what the ultimate meaning will be of mastery of space.

I believe we should go to the moon. But I think every citizen of this country as well as the Members of the Congress should consider the matter carefully in making their judgment, to which we have given attention over many weeks and months, because it is a heavy burden, and there is no sense in agreeing or desiring that the United States take an affirmative position in outer space, unless we are prepared to do the work and bear the burdens to make it successful. If we are not, we should decide today and this year.

This decision demands a major national commitment of scientific and technical manpower, materiel and facilities, and the possibility of their diversion from other important activities where they are already thinly spread. It means a degree of dedication, organization and discipline which have not always characterized our research and development efforts. It means we cannot afford undue work stoppages, inflated costs of material or talent, wasteful interagency rivalries, or a high turnover of key personnel.

New objectives and new money cannot solve these problems. They could in fact, aggravate them further—unless every scientist, every engineer, every serviceman, every technician, contractor, and civil servant gives his personal pledge that this nation will move forward, with the full speed of freedom, in the exciting adventure of space.

JOHN F. KENNEDY

35th President of the United States: 1961 - 1963

Special Message to the Congress on Urgent National Needs

May 25, 1961

Mr. Speaker, Mr. Vice President, my copartners in Government, gentlemen--and ladies:

The Constitution imposes upon me the obligation to "from time to time give to the Congress information of the State of the Union." While this has traditionally been interpreted as an annual affair, this tradition has been broken in extraordinary times.

These are extraordinary times. And we face an extraordinary challenge. Our strength as well as our convictions have imposed upon this nation the role of leader in freedom's cause.

No role in history could be more difficult or more important. We stand for freedom. That is our conviction for ourselves--that is our only commitment to others. No friend, no neutral and no adversary should think otherwise. We are not against any man--or any nation--or any system--except as it is hostile to freedom. Nor am I here to present a new military doctrine, bearing any one name or aimed at any one area. I am here to promote the freedom doctrine.

The great battleground for the defense and expansion of freedom today is the whole southern half of the globe--Asia, Latin America, Africa and the Middle East--the lands of the rising peoples. Their revolution is the greatest in human history. They seek an end to injustice, tyranny, and exploitation. More than an end, they seek a beginning.

And theirs is a revolution which we would support regardless of the Cold War, and regardless of which political or economic route they should choose to freedom.

For the adversaries of freedom did not create the revolution; nor did they create the conditions which compel it. But they are seeking to ride the crest of its wave--to capture it for themselves.

Yet their aggression is more often concealed than open. They have fired no missiles; and their troops are seldom seen. They send arms, agitators, aid, technicians and propaganda to every troubled area. But where fighting is required, it is usually done by others--by guerrillas striking at night, by assassins striking alone--assassins who have taken the lives of four thousand civil officers in the last twelve months in Vietnam alone--by subversives and saboteurs and insurrectionists, who in some cases control whole areas inside of independent nations.1

1 At this point the following paragraph, which appears in the text as signed and transmitted to the Senate and House of Representatives, was omitted in the reading of the message:

They possess a powerful intercontinental striking force, large forces for conventional war, a well-trained underground in nearly every country, the power to conscript talent and manpower for any purpose, the capacity for quick decisions, a closed society without dissent or free information, and long experience in the techniques of violence and subversion. They make the most of their scientific successes, ,their economic progress and their pose as a foe of colonialism and friend of popular revolution. They prey on unstable or unpopular governments, unsealed, or unknown boundaries, unfilled hopes, convulsive change, massive poverty, illiteracy, unrest and frustration.

With these formidable weapons, the adversaries of freedom plan to consolidate their territory--to exploit, to control, and finally to destroy the hopes of the world's newest nations; and they have ambition to do it before the end of this decade. It is a contest of will and purpose as well as force and violence--a battle for minds and souls as well as lives and territory. And in that contest, we cannot stand aside.

We stand, as we have always stood from our earliest beginnings, for the independence and equality of all nations. This nation was born of revolution and raised in freedom. And we do not intend to leave an open road for despotism.

There is no single simple policy which meets this challenge. Experience has taught us that no one nation has the power or the wisdom to solve all the problems of the world or manage its revolutionary tides-that extending our commitments does not always increase our security--that any initiative carries with it the risk of a temporary defeat--that nuclear weapons cannot prevent subversion--that no free people can be kept free without will and energy of their own-- and that no two nations or situations are exactly alike.

Yet there is much we can do--and must do. The proposals I bring before you are numerous and varied. They arise from the host of special opportunities and dangers which have become increasingly clear in recent months. Taken together, I believe that they can mark another step forward in our effort as a people. I am here to ask the help of this Congress and the nation in approving these necessary measures.

II. ECONOMIC AND SOCIAL PROGRESS AT HOME

The first and basic task confronting this nation this year was to turn recession into recovery. An affirmative anti-recession program, initiated with your cooperation, supported the natural forces in the private sector; and our economy is now enjoying renewed confidence and energy. The recession has been halted. Recovery is under way.

But the task of abating unemployment and achieving a full use of our resources does remain a serious challenge for us all. Large-scale unemployment during a recession is bad enough, but large-scale unemployment during a period of prosperity would be intolerable.

I am therefore transmitting to the Congress a new Manpower Development and Training program, to train or retrain several hundred thousand workers, particularly in those areas where we have seen chronic unemployment as a result of technological factors in new occupational skills over a four-year period, in order to replace those skills made obsolete by automation and industrial change with the new skills which the new processes demand.

It should be a satisfaction to us all that we have made great strides in restoring world confidence in the dollar, halting the outflow of gold and improving our balance of payments. During the last two months, our gold stocks actually increased by seventeen million dollars, compared to a loss of 635 million dollars during the last two months of 1960. We must maintain this progress--and this will require the cooperation and restraint of everyone. As recovery progresses, there will be temptations to seek unjustified price and wage increases. These we cannot afford. They will only handicap our efforts to compete abroad and to achieve full recovery here at home. Labor and management must--and I am confident that they will--pursue responsible wage and price policies in these critical times. I look to the President's Advisory Committee on Labor-Management Policy to give a strong lead in this direction.

Moreover, if the budget deficit now increased by the needs of our security is to be held within manageable proportions, it will be necessary to hold tightly to prudent fiscal standards; and I request the cooperation of the Congress in this regard--to refrain from adding funds or programs, desirable as they may be, to the Budget--to end the postal deficit, as my predecessor also recommended, through increased rates--a deficit incidentally, this year, which exceeds the fiscal 1962 cost of all the space and defense measures that I am submitting today--to provide full pay-as-you-go highway financing--and to close those tax loopholes earlier specified. Our security and progress cannot be cheaply purchased; and their price must be found in what we all forego as well as what we all must pay.

III. ECONOMIC AND SOCIAL PROGRESS ABROAD

I stress the strength of our economy because it is essential to the strength of our nation. And what is true in our case is true in the case of other countries. Their strength in the struggle for freedom depends on the strength of their economic and their social progress.

We would be badly mistaken to consider their problems in military terms alone. For no amount of arms and armies can help stabilize those governments which are unable or unwilling to achieve social and economic reform and development. Military pacts cannot help nations whose social injustice and economic chaos invite insurgency and penetration and subversion. The most skillful counter-guerrilla efforts cannot succeed where the local population is too caught up in its own misery to be concerned about the advance of communism.

But for those who share this view, we stand ready now, as we have in the past, to provide generously of our skills, and our capital, and our food to assist the peoples of the less-developed nations to reach their goals in freedom--to help them before they are engulfed in crisis.

This is also our great opportunity in 1961. If we grasp it, then subversion to prevent its success is exposed as an unjustifiable attempt to keep these nations from either being free or equal. But if we do not pursue it, and if they do not pursue it, the bankruptcy of unstable governments, one by one, and of unfilled hopes will surely lead to a series of totalitarian receiverships.

Earlier in the year, I outlined to the Congress a new program for aiding emerging nations; and it is my intention to transmit shortly draft legislation to implement this program, to establish a new Act for International Development, and to add to the figures previously requested, in view of the swift pace of critical events, an additional 250 million dollars for a Presidential Contingency Fund, to be used only upon a Presidential determination in each case, with regular and complete reports to the Congress in each case, when there is a sudden and extraordinary drain upon our regular funds which we cannot foresee--as illustrated by recent events in Southeast Asia--and it makes necessary the use of this emergency reserve. The total amount requested--now raised to 2.65 billion dollars--is both minimal and crucial. I do not see how anyone who is concerned--as we all are--about the growing threats to freedom around the globe--and who is asking what more we can do as a people--can weaken or oppose the single most important program available for building the frontiers of freedom.

IV.

All that I have said makes it clear that we are engaged in a world-wide struggle in which we bear a heavy burden to preserve and promote the ideals that we share with all mankind, or have alien ideals forced upon them. That struggle has highlighted the role of our Information Agency. It is essential that the funds previously requested for this effort be not only approved in full, but increased by 2 million, 400 thousand dollars, to a total of 121 million dollars.

This new request is for additional radio and television to Latin America and Southeast Asia. These tools are particularly effective and essential in the cities and villages of those great continents as a means of reaching millions of uncertain peoples to tell them of our interest in their fight for freedom.

In Latin America, we are proposing to increase our Spanish and Portuguese broadcasts to a total of 154 hours a week, compared to 42 hours today, none of which is in Portuguese, the language of about one-third of the people of South America. The Soviets, Red Chinese and satellites already broadcast into Latin America more than 134 hours a week in Spanish and Portuguese. Communist China alone does more public information broadcasting in our own hemisphere than we do. Moreover, powerful propaganda broadcasts from Havana now are heard throughout Latin America, encouraging new revolutions in several countries.

Similarly, in Laos, Vietnam, Cambodia, and Thailand, we must communicate our determination and support to those upon whom our hopes for resisting the communist tide in that continent ultimately depend. Our interest is in the truth.

V. OUR PARTNERSHIP FOR SELF-DEFENSE

But while we talk of sharing and building and the competition of ideas, others talk of arms and threaten war. So we have learned to keep our defenses strong--and to cooperate with others in a partnership of self-defense. The events of recent weeks have caused us to look anew at these efforts.

The center of freedom's defense is our network of world alliances, extending from NATO, recommended by a Democratic President and approved by a Republican Congress, to SEATO, recommended by a Republican President and approved by a Democratic Congress. These alliances were constructed in the 1940's and 1950's--it is our task and responsibility in the 1960's to strengthen them.

To meet the changing conditions of power--and power relationships have changed--we have endorsed an increased emphasis on NATO's conventional strength. At the same time we are affirming our conviction that the NATO nuclear deterrent must also be kept strong. I have made clear our intention to commit to the NATO command, for this purpose, the 5 Polaris submarines originally suggested by President Eisenhower, with the possibility, if needed, of more to come.

Second, a major part of our partnership for self-defense is the Military Assistance Program. The main burden of local defense against local attack, subversion, insurrection or guerrilla warfare must of necessity rest with local forces. Where these forces have the necessary will and capacity to cope with such threats, our intervention is rarely necessary or helpful. Where the will is present and only capacity is lacking, our Military Assistance Program can be of help.

But this program, like economic assistance, needs a new emphasis. It cannot be extended without regard to the social, political and military reforms essential to internal respect and stability. The equipment and training provided must be tailored to legitimate local needs and to our own foreign and military policies, not to our supply of military stocks or a local leader's desire for military display. And military assistance can, in addition to its military purposes, make a contribution to economic progress, as do our own Army Engineers.

In an earlier message, I requested 1.6 billion dollars for Military Assistance, stating that this would maintain existing force levels, but that I could not foresee how much more might be required. It is now clear that this is not enough. The present crisis in Southeast Asia, on which the Vice President has made a valuable report--the rising threat of communism in Latin America-the increased arms traffic in Africa--and all the new pressures on every nation found on the map by tracing your fingers along the borders of the Communist bloc in Asia and the Middle East--all make clear the dimension of our needs.

I therefore request the Congress to provide a total of 1.885 billion dollars for Military Assistance in the coming fiscal year--an amount less than that requested a year ago-but a minimum which must be assured if we are to help those nations make secure their independence. This must be prudently and wisely spent--and that will be our common endeavor. Military and economic assistance has been a heavy burden on our citizens for a long time, and I recognize the strong pressures against it; but this battle is far from over, it is reaching a crucial stage, and I believe we should participate in it. We cannot merely state our opposition to totalitarian advance without paying the price of helping those now under the greatest pressure.

VI. OUR OWN MILITARY AND INTELLIGENCE SHIELD

In line with these developments, I have directed a further reinforcement of our own capacity to deter or resist non-nuclear aggression. In the conventional field, with one exception, I find no present need for large new levies of men. What is needed is rather a change of position to give us still further increases in flexibility.

Therefore, I am directing the Secretary of Defense to undertake a reorganization and modernization of the Army's divisional structure, to increase its non-nuclear firepower, to improve its tactical mobility in any environment, to insure its flexibility to meet any direct or indirect threat, to facilitate its coordination with our major allies, and to provide more modern mechanized divisions in Europe and bring their equipment up to date, and new airborne brigades in both the Pacific and Europe.

And secondly, I am asking the Congress for an additional 100 million dollars to begin the procurement task necessary to re-equip this new Army structure with the most modern material. New helicopters, new armored personnel carriers, and new howitzers, for example, must be obtained now.

Third, I am directing the Secretary of Defense to expand rapidly and substantially, in cooperation with our Allies, the orientation of existing forces for the conduct of nonnuclear war, para-military operations and sub-limited or unconventional wars.

In addition, our special forces and unconventional warfare units will be increased and reoriented. Throughout the services new emphasis must be placed on the special skills and languages which are required to work with local populations.

Fourth, the Army is developing plans to make possible a much more rapid deployment of a major portion of its highly trained reserve forces. When these plans are completed and the reserve is strengthened, two combat-equipped divisions, plus their supporting forces, a total of 89,000 men, could be ready in an emergency for operations with but 3 weeks' notice--2 more divisions with but 5 weeks' notice--and six additional divisions and their supporting forces, making a total of 10 divisions, could be deployable with less than 8 weeks' notice. In short, these new plans will allow us to almost double the combat power of the Army in less than two months, compared to the nearly nine months heretofore required.

Fifth, to enhance the already formidable ability of the Marine Corps to respond to limited war emergencies, I am asking the Congress for 60 million dollars to increase the Marine Corps strength to 190,000 men. This will increase the initial impact and staying power of our three Marine divisions and three air wings, and provide a trained nucleus for further expansion, if necessary for self-defense.

Finally, to cite one other area of activities that are both legitimate and necessary as a means of self-defense in an age of hidden perils, our whole intelligence effort must be reviewed, and its coordination with other elements of policy assured. The Congress and the American people are entitled to know that we will institute whatever new organization, policies, and control are necessary.

VII. CIVIL DEFENSE

One major element of the national security program which this nation has never squarely faced up to is civil defense. This problem arises not from present trends but from national inaction in which most of us have participated. In the past decade we have intermittently considered a variety of programs, but we have never adopted a consistent policy. Public considerations have been largely characterized by apathy, indifference and skepticism; while, at the same time, many of the civil defense plans have been so far-reaching and unrealistic that they have not gained essential support.

This Administration has been looking hard at exactly what civil defense can and cannot do. It cannot be obtained cheaply. It cannot give an assurance of blast protection that will be proof against surprise attack or guaranteed against obsolescence or destruction. And it cannot deter a nuclear attack.

We will deter an enemy from making a nuclear attack only if our retaliatory power is so strong and so invulnerable that he knows he would be destroyed by our response. If we have that strength, civil defense is not needed to deter an attack. If we should ever lack it, civil defense would not be an adequate substitute.

But this deterrent concept assumes rational calculations by rational men. And the history of this planet, and particularly the history of the 20th century, is sufficient to remind us of the possibilities of an irrational attack, a miscalculation, an accidental war, for a war of escalation in which the stakes by each side gradually increase to the point of maximum danger] which cannot be either foreseen or deterred. It is on this basis that civil defense can be readily justifiable--as insurance for the civilian population in case of an enemy miscalculation. It is insurance we trust will never be needed--but insurance which we could never forgive ourselves for foregoing in the event of catastrophe.

Once the validity of this concept is recognized, there is no point in delaying the initiation of a nation-wide long-range program of identifying present fallout shelter capacity and providing shelter in new and existing structures. Such a program would protect millions of people against the hazards of radioactive fallout in the event of large-scale nuclear attack. Effective performance of the entire program not only requires new legislative authority and more funds, but also sound organizational arrangements.

Therefore, under the authority vested in me by Reorganization Plan No. 1 of 1958, I am assigning responsibility for this program to the top civilian authority already responsible for continental defense, the Secretary of Defense. It is important that this function remain civilian, in nature and leadership; and this feature will not be changed.

The Office of Civil and Defense Mobilization will be reconstituted as a small staff agency to assist in the coordination of these functions. To more accurately describe its role, its title should be changed to the Office of Emergency Planning.

As soon as those newly charged with these responsibilities have prepared new authorization and appropriation requests, such requests will be transmitted to the Congress for a much strengthened Federal-State civil defense program. Such a program will provide Federal funds for identifying fallout shelter capacity in existing structures, and it will include, where appropriate, incorporation of shelter in Federal buildings, new requirements for shelter in buildings constructed with Federal assistance, and matching grants and other incentives for constructing shelter in State and local and private buildings.

Federal appropriations for civil defense in fiscal 1962 under this program will in all likelihood be more than triple the pending budget requests; and they will increase sharply in subsequent years. Financial participation will also be required from State and local governments and from private citizens. But no insurance is cost-free; and every American citizen and his community must decide for themselves whether this form of survival insurance justifies the expenditure of effort, time and money. For myself, I am convinced that it does.

VIII. DISARMAMENT

I cannot end this discussion of defense and armaments without emphasizing our strongest hope: the creation of an orderly world where disarmament will be possible. Our aims do not prepare for war--they are efforts to discourage and resist the adventures of others that could end in war.

That is why it is consistent with these efforts that we continue to press for properly safeguarded disarmament measures. At Geneva, in cooperation with the United Kingdom, we have put forward concrete proposals to make clear our wish to meet the Soviets half way in an effective nuclear test ban treaty--the first significant but essential step on the road towards disarmament. Up to now, their response has not been what we hoped, but Mr. Dean returned last night to Geneva, and we intend to go the last mile in patience to secure this gain if we can.

Meanwhile, we are determined to keep disarmament high on our agenda--to make an intensified effort to develop acceptable political and technical alternatives to the present arms race. To this end I shall send to the Congress a measure to establish a strengthened and enlarged Disarmament Agency.

IX. SPACE

Finally, if we are to win the battle that is now going on around the world between freedom and tyranny, the dramatic achievements in space which occurred in recent weeks should have made clear to us all, as did the Sputnik in 1957, the impact of this adventure on the minds of men everywhere, who are attempting to make a determination of which road they should take. Since early in my term, our efforts in space have been under review. With the advice of the Vice President, who is Chairman of the National Space Council, we have examined where we are strong and where we are not, where we may succeed and where we may not. Now it is time to take longer strides--time for a great new American enterprise--time for this nation to take a clearly leading role in space achievement, which in many ways may hold the key to our future on earth.

I believe we possess all the resources and talents necessary. But the facts of the matter are that we have never made the national decisions or marshaled the national resources required for such leadership. We have never specified long-range goals on an urgent time schedule, or managed our resources and our time so as to insure their fulfillment.

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I therefore ask the Congress, above and beyond the increases I have earlier requested for space activities, to provide the funds which are needed to meet the following national goals:

First, I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to the earth. No single space project in this period will be more impressive to mankind, or more important for the long-range exploration of space; and none will be so difficult or expensive to accomplish. We propose to accelerate the development of the appropriate lunar space craft. We propose to develop alternate liquid and solid fuel boosters, much larger than any now being developed, until certain which is superior. We propose additional funds for other engine development and for unmanned explorations--explorations which are particularly important for one purpose which this nation will never overlook: the survival of the man who first makes this daring flight. But in a very real sense, it will not be one man going to the moon--if we make this judgment affirmatively, it will be an entire nation. For all of us must work to put him there.

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Now this is a choice which this country must make, and I am confident that under the leadership of the Space Committees of the Congress, and the Appropriating Committees, that you will consider the matter carefully.

It is a most important decision that we make as a nation. But all of you have lived through the last four years and have seen the significance of space and the adventures in space, and no one can predict with certainty what the ultimate meaning will be of mastery of space.

I believe we should go to the moon. But I think every citizen of this country as well as the Members of the Congress should consider the matter carefully in making their judgment, to which we have given attention over many weeks and months, because it is a heavy burden, and there is no sense in agreeing or desiring that the United States take an affirmative position in outer space, unless we are prepared to do the work and bear the burdens to make it successful. If we are not, we should decide today and this year.

This decision demands a major national commitment of scientific and technical manpower, materiel and facilities, and the possibility of their diversion from other important activities where they are already thinly spread. It means a degree of dedication, organization and discipline which have not always characterized our research and development efforts. It means we cannot afford undue work stoppages, inflated costs of material or talent, wasteful interagency rivalries, or a high turnover of key personnel.

New objectives and new money cannot solve these problems. They could in fact, aggravate them further--unless every scientist, every engineer, every serviceman, every technician, contractor, and civil servant gives his personal pledge that this nation will move forward, with the full speed of freedom, in the exciting adventure of space.

X. CONCLUSION

In conclusion, let me emphasize one point. It is not a pleasure for any President of the United States, as I am sure it was not a pleasure for my predecessors, to come before the Congress and ask for new appropriations which place burdens on our people. I came to this conclusion with some reluctance. But in my judgment, this is a most serious time in the life of our country and in the life of freedom around the globe, and it is the obligation, I believe, of the President of the United States to at least make his recommendations to the Members of the Congress, so that they can reach their own conclusions with that judgment before them. You must decide yourselves, as I have decided, and I am confident that whether you finally decide in the way that I have decided or not, that your judgment--as my judgment--is reached on what is in the best interests of our country.

In conclusion, let me emphasize one point: that we are determined, as a nation in 1961 that freedom shall survive and succeed--and whatever the peril and set-backs, we have some very large advantages.

The first is the simple fact that we are on the side of liberty--and since the beginning of history, and particularly since the end of the Second World War, liberty has been winning out all over the globe.

A second great asset is that we are not alone. We have friends and allies all over the world who share our devotion to freedom. May I cite as a symbol of traditional and effective friendship the great ally I am about to visit--France. I look forward to my visit to France, and to my discussion with a great Captain of the Western World, President de Gaulle, as a meeting of particular significance, permitting the kind of close and ranging consultation that will strengthen both our countries and serve the common purposes of world-wide peace and liberty. Such serious conversations do not require a pale unanimity--they are rather the instruments of trust and understanding over a long road.

A third asset is our desire for peace. It is sincere, and I believe the world knows it. We are proving it in our patience at the test-ban table, and we are proving it in the UN where our efforts have been directed to maintaining that organization's usefulness as a protector of the independence of small nations. In these and other instances, the response of our opponents has not been encouraging.

Yet it is important to know that our patience at the bargaining table is nearly inexhaustible, though our credulity is limited--that our hopes for peace are unfailing, while our determination to protect our security is resolute. For these reasons I have long thought it wise to meet with the Soviet Premier for a personal exchange of views. A meeting in Vienna turned out to be convenient for us both; and the Austrian government has kindly made us welcome. No formal agenda is planned and no negotiations will be undertaken; but we will make dear America's enduring concern is for both peace and freedom--that we are anxious to live in harmony with the Russian people--that we seek no conquests, no satellites, no riches--that we seek only the day when "nation shall not lift up sword against nation, neither shall they learn war any more."

Finally, our greatest asset in this struggle is the American people--their willingness to pay the price for these programs--to understand and accept a long struggle--to share their resources with other less fortunate people-to meet the tax levels and close the tax loopholes I have requested--to exercise self-restraint instead of pushing up wages or prices, or over-producing certain crops, or spreading military secrets, or urging unessential expenditures or improper monopolies or harmful work stoppages--to serve in the Peace Corps or the Armed Services or the Federal Civil Service or the Congress--to strive for excellence in their schools, in their cities and in their physical fitness and that of their children--to take part in Civil Defense-to pay higher postal rates, and higher payroll taxes and higher teachers' salaries, in order to strengthen our society--to show friendship to students and visitors from other lands who visit us and go back in many cases to be the future leaders, with an image of America--and I want that image, and I know you do, to be affirmative and positive-and, finally, to practice democracy at home, in all States, with all races, to respect each other and to protect the Constitutional rights of all citizens.

I have not asked for a single program which did not cause one or all Americans some inconvenience, or some hardship, or some sacrifice. But they have responded-and you in the Congress have responded to your duty--and I feel confident in asking today for a similar response to these new and larger demands. It is heartening to know, as I journey abroad, that our country is united in its commitment to freedom-and is ready to do its duty.

Delivered in person before a joint session

John F. Kennedy, Special Message to the Congress on Urgent National Needs Online by Gerhard Peters and John T. Woolley, The American Presidency Project https://www.presidency.ucsb.edu/node/234560

President Kennedy delivers major policy speech ADDRESS AT UNIVERSITY OF WASHINGTON Seattle, at 100th Anniversary Program, 16 **on November 16, 1961.**

Courtesy JFK Library (ST-A41-1-61)

See Additional Media

On November 16, 1961, President John F. Kennedy (1917-1963), the 35th president of the United States, delivers a major foreign policy speech at the University of Washington Centennial Convocation. He is also in Seattle to attend a dinner that evening celebrating the 25th anniversary of Senator Warren Magnuson (1905-1989) in Congress. Magnuson, like Kennedy a Democrat, was elected to the House of Representatives in 1936. Kennedy was elected president in 1960.

On a clear, crisp November day, President Kennedy, Senator Magnuson, and Washington Governor Albert Rosellini (1910-2011) rode an open convertible in a 20-automobile presidential motorcade from Boeing Field to a 15-block long "Welcome Lane" extending along 4th Avenue from Jefferson Street to Stewart Street. Spectators overflowed the streets and threw confetti from buildings. Twenty-six different bands serenaded the president.

Everybody Came

Greater Seattle, Inc., which organized the event, estimated the crowd to be 90,000. Police reports estimated the number at 25,000 to 30,000 in one report and 50,000 in another. Construction workers working on the Municipal Building paused to watch the motorcade, "dangling their legs above the street from unfinished parts of the building" (*The Seattle Times*).

"At Fourth Avenue and University Street, where the crowd was at its highest density, masses of people swept off the sidewalks into the street, overwhelming police and Secret Service men, and surged into the street to surround the presidential car. The movement was a spontaneous impulsive tribute to the President and came as a complete surprise to the traffic control and security men" (*Seattle Post-Intelligencer*).

After a brief stop at The Olympic Hotel, where he was staying that night, Kennedy proceeded via Aurora Avenue N and N 40th Street to the University of Washington Edmundson Pavilion to give his speech.

Dissenters Protest Cuba Policy and the Bomb

It is not known whether President Kennedy saw two groups of "peace walkers" near Edmundson Pavilion. At 15th Avenue NE and NE Pacific Street about 20 University of Washington students and residents picketed to keep the United States out of Cuba. They held signs that read "FAIR PLAY FOR CUBA," "NO MORE SUGAR TRUST INVASIONS," and "DON'T FIGHT FOR UNITED FRUIT."

Another group, about 75 strong, who called themselves Women Marching for Peace, also picketed near Edmundson Pavilion. Many of the women pushed baby buggies. They had signs reading "END NUCLEAR TESTS NOW," "MAN MUST PUT AN END TO WAR," "PEACE FOR OUR CHILDREN," and "MR. PRESIDENT, PLEASE STOP NUCLEAR TESTING." Both groups handed out leaflets.

The World in 1961

When President Kennedy entered the Pavilion, the audience of 11,000 greeted him with a "spontaneous burst of applause." The president delivered a major and "solemn" foreign policy speech (which lasted 35 minutes) concerning relations with the Soviet Union.

The United States and the Soviet Union were at the height of the Cold War, which had started shortly after the end of World War II. Cuba and Berlin were hot spots. In April 1961, the United States Central Intelligence Agency (CIA) had organized 1,400 armed Cuban exiles in a failed attempt to invade Cuba at the Bay of Pigs. Fidel Castro (b. 1927), the revolutionary Cuban leader who had ousted a U.S.-backed dictator in 1959, responded by publicly aligning Cuba with the Soviet Union. In July 1961, both the Soviet Union and the United States significantly increased defense spending. On August 20, 1961, East Germany erected a five-foot-high concrete wall dividing East and West

Berlin and on October 28, 1961, a tense, 16-hour face off occurred at the Berlin Wall between Soviet and American tanks.

On August 31, 1961, the Soviet Union began conducting aboveground nuclear tests, detonating perhaps 15 bombs during September 1961. The United States responded with its own underground nuclear tests. At the end of October, the Soviets detonated a 50-megaton H-bomb. Local newspapers advised Seattleites on how to construct and stock personal nuclear fallout shelters.

The major foreign policy address delivered at the University of Washington was John F. Kennedy's "first talk" in the Western United States since the inauguration. He delivered the speech "in calm, measured tones." Here are excerpts from the full text of the speech, which was printed in *The New York Times*:

Text of Kennedy Speech -- Excerpts

> "Regents, members of the faculty, students, ladies and gentlemen: It is a great honor on behalf of the people of the United States to extend to you congratulations on the centennial anniversary of this University which represents 100 years of service to this state and country. This University was founded when the Civil War was already on, and no one could be sure in 1861 whether this country would survive. But the picture which the student of 1961 has of the world, and indeed which our citizens have of the world, is infinitely more complicated and infinitely more dangerous. In 1961 the world relations of this country have become tangled and complex.

"One of our former allies has become our adversary and he has his own adversaries who are not our allies. We must work with certain countries lacking in freedom in order to strengthen the cause of freedom. [Ed. Note: This is a reference the the Soviet Union, which was an American ally during World War II, and the American policy of supporting autocratic anti-Soviet regimes.]

"We find some who call themselves neutral who are our friends and sympathetic to us, and others who call themselves neutral who are unremittingly hostile to us. We cannot, as a free nation, compete with our adversaries in tactics of terror, assassination, false promises, counterfeit mobs, and crises. We cannot, under the scrutiny of a free press and public, tell different stories to different audiences, foreign and domestic, friendly and hostile. We cannot abandon the slow process of consulting with our allies to match the swift expediencies of those who merely dictate to their satellites. ... We possess weapons of tremendous power, but they are least effective in combating the weapons most often used by freedom's foes: subversion, infiltration, guerilla warfare, and civil disorder. We can send arms to other peoples just as we can send them the ideals of democracy in which we believe. But we cannot send them the will to use those arms or to abide by those ideals.

"In short, we must face problems which do not lend themselves to easy or quick or permanent solutions. And we must face the fact that the United States is neither omnipotent nor omniscient — that we are only 6 per cent of the world's population and that we cannot impose our will upon the other 94 per cent of mankind — that we cannot right every wrong or reverse each adversity, and that, therefore, there cannot be an American solution to every world problem.

"These burdens and frustrations are accepted by most Americans with maturity and understanding. They may long for the days ... when the atomic bomb was ours alone, or when much of the industrialized world depended upon our economic resources and aid. But they know that those days are gone, and that gone with them are the old policies and the old complacency. ...

"... [T]here are others who cannot bear the burden of a long twilight struggle [and] lack confidence in our long run capacity to survive and succeed. ... There are two groups of these frustrated citizens, far apart in their views yet very much alike in their approach.

"On the one hand are those who urge upon us what I regard to be the pathway of surrender — appeasing our enemies, compromising our commitments, purchasing peace at any price, disavowing our arms, our friends, our obligations. If their view had prevailed, the world of free choice would be smaller today.

"On the other hand are those who urge upon us what I regard to be the pathway of war: equating negotiations with appeasement and substituting rigidity for firmness. If their view had prevailed, we would be at war today, and in more than one place.

"It is a curious fact that each of these extreme opposites resembles the other. Each believes that we have only two choices: appeasement or war, suicide or surrender, humiliation or holocaust, to be either Red or dead. ...

"The essential fact that both of these groups fail to grasp is that diplomacy and defense are not substitutes for one another. Either alone would fail. A willingness to resist force, unaccompanied by a willingness to talk, could provoke belligerence — while a willingness to talk, unaccompanied by a willingness to resist force, could invite disaster.

"But as long as we know what comprises our vital interests and our long-range goals, we have nothing to fear from negotiations at the appropriate time, and nothing to gain by refusing to take part in them. At a time when a single clash could escalate overnight into a holocaust of mushroom clouds, a great power does not prove its firmness by leaving the task of exploring the other's intentions to sentries or those without full responsibility.

"Nor can ultimate weapons rightfully be employed, or the ultimate sacrifice rightfully demanded of our citizens, until every reasonable solution has been explored. "How many wars," Winston Churchill has written, "have been averted by patience and persisting good will! How many wars have been precipitated by firebrands!"

"If vital interests under duress can be preserved by peaceful means, negotiations will find that out. If our adversary will accept nothing less than a concession of our rights, negotiation will find that out. With respect to any future talks on Germany and Berlin, for example, we cannot, on the one hand, confine our proposals to a list of concessions that we are willing to make. Nor can we, on the other hand, advance any proposals which compromise the security of free Germans and West Berliners, or endanger their ties with the West.

"No one should be under the illusion that negotiations for the sake of negotiations always advance the cause of peace — If they are made a mere forum for propaganda or a cover for aggression, the processes of peace have been abused.

"But it is a test of our national maturity to accept the fact that negotiations are not a contest spelling victory or defeat. They may succeed, they may fail. But, they are likely to be successful only if both sides reach an agreement which both regard as preferable to the status quo, and agreement in which each side can consider that its own situation has been improved, and this is most difficult to obtain.

"But, while we shall negotiate freely, we will never negotiate freedom. ... [F]or the first time since the ancient battles between Greek city-states, war entails the threat of total annihilation of everything we know, of society itself. For to save mankind's future freedom, we must face up to any risk that is necessary. We will always seek peace — but we will never surrender.

"In short, we are neither 'warmongers' nor 'appeasers,' neither 'hard' nor 'soft.' We are Americans, determined to defend the frontiers of freedom, by an honorable peace if peace is possible, but by arms if arms are used against us.

"And if we are to move forward in that spirit, we shall need all the calm and thoughtful citizens that this great University can produce, all the light that they can shed, all the wisdom that they can bring to bear. It is customary, both here and around the world, to regard life in these United States as easy. Our advantages are many. But more than any other people on earth, we bear burdens and accept risks unprecedented in their size and their duration, not for ourselves alone but for all who wish to be free. No other generation of free men in any country has ever faced so many and so difficult challenges — not even those who lived in the dark days of 1861 when this great University was founded.

"This nation was then torn by war. This territory had only the simplest elements of civilization. And this city had barely begun to function. But a university was one of their earliest thoughts — and they summed it up in the motto that they adopted [for the University of Washington]: 'Let There be Light.' What more can be said today, regarding all the dark and tangled problems that we face than, 'Let there be light.' And to accomplish that illumination, the University of Washington shall hold high the torch" (*The New York Times,* November 17, 1961).

Warren Magnuson Honored

After the speech the president returned to The Olympic Hotel. His next public engagement was at the hotel at Senator Warren Magnuson's 25th Anniversary dinner. Seated at the head table with the President and Senator Magnuson were 10 U.S. Senators including Senate Majority Leader Mike Mansfield of Montana, four U.S. Representatives, and Premier W. A. C. Bennett of British Columbia. The dinner's main purpose was to raise funds for Senator Magnuson's upcoming election. Nearly 3,000 people paid $100 for dinner: The Olympic Hotel could not seat them all. Four large ballrooms and six smaller dining rooms were filled and additional tables were set up on the Hotel's mezzanine. The overflow went to Victor Rosellini's 410 Restaurant (410 University Street) across the street from The Olympic Hotel. President Kennedy went to each ballroom to make brief remarks before giving his main talk in the Grand Ballroom at about 9:25 p.m. Most of the diners saw the talk on closed circuit television.

President Kennedy stated, "No man has done more to transform the face of this state in the last 25 years than your senior senator." The president commented on how effortlessly Senator Magnuson was able to get legislation passed.

Kennedy and Nuclear Power

President Kennedy commented on the failure of the U.S. Congress to approve funding to convert Hanford Atomic Works into an electrical power plant. "All who say that the United States should not commit itself to being the leader in the peacetime use of atomic energy -- those who say we should waste this resource which we have now in the Pacific Northwest and which has been fought for by Senator [Henry] Jackson at Hanford -- those who say 'no' to this country I believe are going to find as time goes on in the next 5, 10, 15, 20, and 25 years that all their predictions of failure and disaster [regarding nuclear plants] will have been proven wrong as they have been in the last 25 years" (*The Seattle Times*).

Shortly before 10 p.m. the president returned to the Presidential Suite on the 11th floor of The Olympic Hotel.

Covert Operation

More than 30 years later, word got out that a secret meeting was held with President Kennedy during this stay at The Olympic Hotel. At the time, this was known to only a few individuals. While researching his 1997 book, *The Dark Side of Camelot*, Seymour M. Hersh interviewed former Secret Service agent Larry Newman, who spilled the beans.

Newman joined the Secret Service in 1960, and his first major assignment on presidential detail was to provide security during Kennedy's trip to Seattle. The Seattle Police Department was most cooperative, and one entire floor of The Olympic Hotel was sealed off, as requested by the Secret Service.

Soon after Kennedy returned from his speech at the University, Newman heard a "commotion up at the elevator." A local sheriff "had come out of the elevator with two hookers and was bringing them down toward the presidential suite." Dave Powers, Kennedy's aide, came out of the suite, thanked the sheriff for bringing the women up, and took them inside.

Before leaving, the sheriff warned the women that if word ever got out about their liaison, he'd make sure that they would both go to Steilacoom -- a state mental hospital -- where they would never get out. Newman was shocked that the sheriff said this, let alone that everyone on security detail considered this kind of "meeting" with the president as commonplace. One of the policemen asked Newman if this happened all the time, to which he could only reply, "Well, we travel during the day. This only happens at night."

Later that evening, Newman went on a security check around the floor. At least six police officers were supposed to be guarding the fire escapes, but he found the posts unmanned. He later found policemen in a fire-escape well, which -- because the hotel is U-shaped -- had a view of a room near the presidential suite. The gauze curtains were drawn, but not the heavy blinds. Inside, two women on the White House staff were having a three-way sexual encounter with Kennedy's close aide and friend, Kenneth O'Donnell. The officers were passing around a pair of binoculars, but Newman told them to return to their posts.

The next morning President Kennedy departed shortly after 8 a.m. At 8:54 a.m. his plane took off from Boeing Field. Thus ended his 21-hour stay in Seattle.

John F. Kennedy, Warren Magnuson, and UW president Charles Odegaard, Seattle, November 16, 1961

Courtesy UW Special Collections (SOC6696)

JOHN F. KENNEDY

35th President of the United States: 1961 - 1963

Address at Independence Hall, Philadelphia.

July 04, 1962

Governor Powell, Your Excellency the Archbishop, Governor Lawrence, Mayor Tate, Senator Clark, Congressman Green, distinguished Governors, ladies and gentlemen, citizens of Philadelphia:

It is a high honor for any citizen of our great Republic to speak at this Hall of Independence on this day of Independence. To speak as President of the United States to the Chief Executives of our 50

States is both an opportunity and an obligation. The necessity for comity between the National Government and the several States is an indelible lesson of our long history.

Because our system is designed to encourage both differences and dissent, because its checks and balances are designed to preserve the rights of the individual and the locality against preeminent central authority, you and I, Governors, recognize how dependent we both are, one upon the other, for the successful operation of our unique and happy form of government. Our system and our freedom permit the legislative to be pitted against the executive, the State against the Federal Government, the city against the countryside, party against party, interest against interest, all in competition or in contention one with another. Our task--your task in the State House and my task in the White House--is to weave from all these tangled threads a fabric of law and progress. We are not permitted the luxury of irresolution. Others may confine themselves to debate, discussion, and that ultimate luxury-free advice. Our responsibility is one of decision--for to govern is to choose.

Thus, in a very real sense, you and I are the executors of the testament handed down by those who gathered in this historic hall 186 years ago today. For they gathered to affix their names to a document which was, above all else, a document not of rhetoric but of bold decision. It was, it is true, a document of protest--but protests had been made before. It set forth their grievances with eloquence--but such eloquence had been heard before. But what distinguished this paper from all the others was the final irrevocable decision that it took--to assert the independence of free States in place of colonies, and to commit to that goal their lives, their fortunes, and their sacred honor.

Today, 186 years later, that Declaration whose yellowing parchment and fading, almost illegible lines I saw in the past week in the National Archives in Washington is still a revolutionary document. To read it today is to hear a trumpet call. For that Declaration unleashed not merely a revolution against the British, but a revolution in human affairs. Its authors were highly conscious of its worldwide implications. And George Washington declared that liberty and self-government everywhere were, in his words, "finally staked on the experiment entrusted to the hands of the American people."

This prophecy has been borne out. For 186 years this doctrine of national independence has shaken the globe--and it remains the most powerful force anywhere in the world today. There are those struggling to eke out a bare existence in a barren land who have never heard of free enterprise, but who cherish the idea of independence. There are those who are grappling with overpowering problems of illiteracy and ill-health and who are ill-equipped to hold free elections. But they are determined to hold fast to their national independence. Even those unwilling or unable to take part in any struggle between East and West are strongly on the side of their own national independence. If there is a single issue that divides the world today, it is independence--the independence of Berlin or Laos or Viet-Nam; the longing for independence behind the Iron Curtain; the peaceful transition to independence in those newly emerging areas whose troubles some - hope to exploit.

The theory of independence is as old as man himself, and it was not invented in this hall. But it was in this hall that the theory became a practice; that the word went out to all, in Thomas Jefferson's phrase, that "the God who gave us life, gave us liberty at the same time." And today this Nation--

conceived in revolution, nurtured in liberty, maturing in independence--has no intention of abdicating its leadership in that worldwide movement for independence to any nation or society committed to systematic human oppression.

As apt and applicable as the Declaration of Independence is today, we would do well to honor that other historic document drafted in this hall--the Constitution of the United States. For it stressed not independence but interdependence--not the individual liberty of one but the indivisible liberty of all.

In most of the old colonial world, the struggle for independence is coming to an end. Even in areas behind the Curtain, that which Jefferson called "the disease of liberty" still appears to be infectious. With the passing of ancient empires, today less than 2 percent of the world's population lives in territories officially termed "dependent." As this effort for independence, inspired by the American Declaration of Independence, now approaches a successful close, a great new effort--for interdependence--is transforming the world about us. And the spirit of that new effort is the same spirit which gave birth to the American Constitution.

That spirit is today most clearly seen across the Atlantic Ocean. The nations of Western Europe, long divided by feuds far more bitter than any which existed among the 13 colonies, are today joining together, seeking, as our forefathers sought, to find freedom in diversity and in unity, strength.

The United States looks on this vast new enterprise with hope and admiration. We do not regard a strong and united Europe as a rival but as a partner. To aid its progress has been the basic object of our foreign policy for U years. We believe that a united Europe will be capable of playing a greater role in the common defense, of responding more generously to the needs of poorer nations, of joining with the United States and others in lowering trade barriers, resolving problems of commerce, commodities, and currency, and developing coordinated policies in all economic, political, and diplomatic areas. We see in such a Europe a partner with whom we can deal on a basis of full equality in all the great and burdensome tasks of building and defending a community of free nations.

It would be premature at this time to do more than indicate the high regard with which we view the formation of this partnership. The first order of business is for our European friends to go forward in forming the more perfect union which will someday make this partnership possible.

A great new edifice is not built overnight. It was 11 years from the Declaration of Independence to the writing of the Constitution. The construction of workable Federal institutions required still another generation. The greatest works of our Nation's founders lay not in documents and in declarations, but in creative, determined action. The building of the new house of Europe has followed the same practical, purposeful course. Building the Atlantic partnership now will not be easily or cheaply finished.

But I will say here and now, on this Day of Independence, that the United States will be ready for a Declaration of Interdependence, that we will be prepared to discuss with a united Europe the ways and means of forming a concrete Atlantic partnership, a mutually beneficial partnership between the new union now emerging in Europe and the old American Union founded here 175 years ago.

All this will not be completed in a year, but let the world know it is our goal.

In urging the adoption of the United States Constitution, Alexander Hamilton told his fellow New Yorkers "to think continentally." Today Americans must learn to think inter-continentally.

Acting on our own, by ourselves, we cannot establish justice throughout the world; we cannot insure its domestic tranquility, or provide for its common defense, or promote its general welfare, or secure the blessings of liberty to ourselves and our posterity. But joined with other free nations, we can do all this and more. We can assist the developing nations to throw off the yoke of poverty. We can balance our worldwide trade and payments at the highest possible level of growth. We can mount a deterrent powerful enough to deter any aggression. And ultimately we can help to achieve a world of law and free choice, banishing the world of war and coercion.

for the Atlantic partnership of which I speak would not look inward only, preoccupied with its own welfare and advancement. It must look outward to cooperate with all nations in meeting their common concern. It would serve as a nucleus for the eventual union of all free men--those who are now free and those who are vowing that some day they will be free.

On Washington's birthday in 1861, standing right there, President-elect Abraham Lincoln spoke in this hall on his way to the Nation's Capital. And he paid a brief but eloquent tribute to the men who wrote, who fought for, and who died for the Declaration of Independence. Its essence, he said, was its promise not only of liberty "to the people of this country, but hope to the world . . . [hope] that in due time the weights should be lifted from the shoulders of all men, and that all should have an equal chance."

On this fourth day of July, 1962, we who are gathered at this same hall, entrusted with the fate and future of our States and Nation, declare now our vow to do our part to lift the weights from the shoulders of all, to join other men and nations in preserving both 'peace and freedom, and to regard any threat to the peace or freedom of one as a threat to the peace and freedom of all. "And for the support of this Declaration, with a firm reliance on the protection of Divine Providence, we mutually pledge to each other our Lives, our fortunes and our sacred Honor."

Note: The President spoke at 11:40 a.m. in Independence Square in Philadelphia. In his opening words he referred to Governor Wesley Powell of New Hampshire, chairman of the Governors' Conference, the Most Reverend John Krol, Archbishop of Philadelphia, Governor David L. Lawrence of Pennsylvania, Mayor James H. J. Tate of Philadelphia, and U.S. Senator Joseph S. Clark and U.S. Representative William J. Green, Jr., of Pennsylvania.

Included in the audience were members of the 54th National Governors Conference.

John F. Kennedy, Address at Independence Hall, Philadelphia. Online by Gerhard Peters and John T. Woolley, The American Presidency Project https://www.presidency.ucsb.edu/node/236215

John F. Kennedy Address at Rice University on the Space Effort

Sept. 12, 1962

President Pitzer, Mr. Vice President, Governor, Congressman Thomas, Senator Wiley, and Congressman Miller, Mr. Webb. Mr. Bell, scientists, distinguished guests, and ladies and gentlemen: I appreciate your president having made me an honorary visiting professor, and I will assure you that my first lecture will be very brief. I am delighted to be here and I'm particularly delighted to be here on this occasion.

We meet at a college noted for knowledge, in a city noted for progress, in a State noted for strength, and we stand in need of all three, for we meet in an hour of change and challenge, in a decade of hope and fear, in an age of both knowledge and ignorance. The greater our knowledge increases, the greater our ignorance unfolds.

Despite the striking fact that most of the scientists that the world has ever known are alive and working today, despite the fact that this Nation's own scientific manpower is doubling every 12 years in a rate of growth more than three times that of our population as a whole, despite that, the vast stretches of the unknown and the unanswered and the unfinished still far out-strip our collective comprehension.

No man can fully grasp how far and how fast we have come, but condense, if you will, the 50,000 years of man's recorded history in a time span of but a half century. Stated in these terms, we know very little about the first 40 years, except at the end of them advanced man had learned to use the skins of animals to cover them. Then about 10 years ago, under this standard, man emerged from his caves to construct other kinds of shelter. Only 5 years ago man learned to write and use a cart with wheels. Christianity began less than 2 years ago. The printing press came this year, and then less than 2 months ago, during this whole 50-year span of human history, the steam engine provided a new source of power.

Newton explored the meaning of gravity. Last month electric lights and telephones and automobiles and airplanes became available. Only last week did we develop penicillin and television and nuclear power, and now if America's new spacecraft succeeds in reaching Venus, we will have literally reached the stars before midnight tonight.

This is a breathtaking pace, and such a pace cannot help but create new ills as it dispels old, new ignorance, new problems, new dangers. Surely the opening vistas of space promise high costs and hardships, as well as high reward.

So it is not surprising that some would have us stay where we are a little longer to rest, to wait. But this city of Houston, this State of Texas, this country of the United States was not built by those who waited and rested and wished to look behind them. This country was conquered by those who moved forward-and so will space.

William Bradford, speaking in 1630 of the founding of the Plymouth Bay Colony, said that all great and honorable actions are accompanied with great difficulties, and both must be enterprised and overcome with answerable courage.

If this capsule history of our progress teaches us anything, it is that man, in his quest for knowledge and progress, is determined and cannot be deterred. The exploration of space will go ahead, whether we join in it or not, and it is one of the great adventures of all time, and no nation which expects to be the leader of other nations can expect to stay behind in this race for space.

Those who came before us made certain that this country rode the first waves of the industrial revolutions, the first waves of modern invention, and the first wave of nuclear power, and this generation does not intend to founder in the backwash of the coming age of space. We mean to be a part of it - we mean to lead it. For the eyes of the world now look into space, to the moon and to the planets beyond, and we have vowed that we shall not see it governed by a hostile flag of conquest, but by a banner of freedom and peace. We have vowed that we shall not see space filled with weapons of mass destruction, but with instruments of knowledge and understanding.

Yet the vows of this Nation can only be fulfilled if we in this Nation are first, and, therefore, we intend to be first. In short, our leadership in science and in industry, our hopes for peace and security, our obligations to ourselves as well as others, all require us to make this effort, to solve these mysteries, to solve them for the good of all men, and to become the world's leading space-faring nation.

We set sail on this new sea because there is new knowledge to be gained, and new rights to be won, and they must be won and used for the progress of all people. For space science, like nuclear science and all technology, has no conscience of its own. Whether it will become a force for good or ill depends on man, and only if the United States occupies a position of pre-eminence can we help decide whether this new ocean will be a sea of peace or a new terrifying theater of war. I do not say that we should or will go unprotected against the hostile misuse of space any more than we go unprotected against the hostile use of land or sea, but I do say that space can be explored and mastered without feeding the fires of war, without repeating the mistakes that man has made in extending his writ around this globe of ours.

There is no strife, no prejudice, no national conflict in outer space as yet. Its hazards are hostile to us all. Its conquest deserves the best of all mankind, and its opportunity for peaceful cooperation may never come again. But why, some say, the moon? Why choose this as our goal? And they may well ask why climb the highest mountain. Why, 35 years ago, fly the Atlantic? Why does Rice play Texas?

We choose to go to the moon. We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win, and the others, too.

It is for these reasons that I regard the decision last year to shift our efforts in space from low to high gear as among the most important decisions that will be made during my incumbency in the Office of the Presidency.

In the last 24 hours we have seen facilities now being created for the greatest and most complex exploration in man's history. We have felt the ground shake and the air shattered by the testing of a Saturn C-1 booster rocket, many times as powerful as the Atlas which launched John Glenn, generating power equivalent to 10,000 automobiles with their accelerators on the floor. We have seen the site where five F-1 rocket engines, each one as powerful as all eight engines of the Saturn combined, will be clustered together to make the advanced Saturn missile, assembled in a new building to be built at Cape Canaveral as tall as a 48-story structure, as wide as a city block, and as long as two lengths of this field.

Within these last 19 months at least 45 satellites have circled the earth. Some 40 of them were "made in the United States of America" and they were far more sophisticated and supplied far more knowledge to the people of the world than those of the Soviet Union.

The Mariner spacecraft now on its way to Venus is the most intricate instrument in the history of space science. The accuracy of that shot is comparable to firing a missile from Cape Canaveral and dropping it in this stadium between the 40-yard lines.

Transit satellites are helping our ships at sea to steer a safer course. Tiros satellites have given us unprecedented warnings of hurricanes and storms, and will do the same for forest fires and icebergs.

We have had our failures, but so have others, even if they do not admit them. And they may be less public.

To be sure, we are behind, and will be behind for some time in manned flight. But we do not intend to stay behind, and in this decade we shall make up and move ahead.

The growth of our science and education will be enriched by new knowledge of our universe and environment, by new techniques of learning and mapping and observation, by new tools and computers for industry, medicine, the home as well as the school. Technical institutions, such as Rice, will reap the harvest of these gains.

And finally, the space effort itself, while still in its infancy, has already created a great number of new companies, and tens of thousands of new jobs. Space and related industries are generating new demands in investment and skilled personnel, and this city and this State, and this region, will share greatly in this growth. What was once the furthest outpost on the old frontier of the West will be the furthest outpost on the new frontier of science and space. Houston, your City of Houston, with its Manned Spacecraft Center, will become the heart of a large scientific and engineering community. During the next 5 years the National Aeronautics and Space Administration expects to double the number of scientists and engineers in this area, to increase its outlays for salaries and expenses to $60 million a year; to invest some $200 million in plant and laboratory facilities; and to direct or contract for new space efforts over $1 billion from this Center in this City.

To be sure, all this costs us all a good deal of money. This year's space budget is three times what it was in January 1961, and it is greater than the space budget of the previous 8 years combined. That budget now stands at $5,400 million a year-a staggering sum, though somewhat less than we pay for cigarettes and cigars every year. Space expenditures will soon rise some more from 40 cents per person per week to more than 50 cents a week for every man, woman, and child in the United States, for we have given this program a high national priority even though I realize that this is in some measure an act of faith and vision, for we do not now know what benefits await us. But if I were to say, my fellow citizens, that we shall send to the moon, 240,000 miles away from the control station in Houston, a giant rocket more than 300 feet tall, the length of this football field, made of new metal alloys, some of which have not yet been invented, capable of standing heat and stresses several times more than have ever been experienced, fitted together with a precision better than the finest watch, carrying all the equipment needed for propulsion, guidance, control, communications, food and survival, on an untried mission, to an unknown celestial body, and then return it safely to earth, reentering the atmosphere at speeds of over 25,000 miles per hour, causing heat about half that of the temperature of the sun - almost as hot as it is here today - and do all this, and do it right, and do it first before this decade is out, then we must be bold.

I'm the one who is doing all the work, so we just want you to stay cool for a minute. [Laughter] However, I think we're going to do it, and I think that we must pay what needs to be paid. I don't think we ought to waste any money, but I think we ought to do the job. And this will be done in the decade of the sixties. It may be done while some of you are still here at school at this college and university. It will be done during the terms of office of some of the people who sit here on this platform. But it will be done. And it will be done before the end of this decade.

I am delighted that this university is playing a part in putting a man on the moon as part of a great national effort of the United States of America.

Many years ago the great British explorer George Mallory, who was to die on Mount Everest, was asked why did he want to climb it. He said, "Because it is there."

Well, space is there, and we're going to climb it, and the moon and the planets are there, and new hopes for knowledge and peace are there. And, therefore, as we set sail we ask God's blessing on the most hazardous and dangerous and greatest adventure on which man has ever embarked.

Thank you.

NOTE: The President spoke in the Rice University Stadium at 10 a.m.

In his opening words he referred to Dr. K. S. Pitzer, President of the University, Vice President Lyndon B. Johnson, Governor Price Daniel of Texas, Representative Albert Thomas of Texas, Senator Alexander Wiley of Wisconsin, Representative George P. Miller of California, James E. Webb, Administrator, National Aeronautics and Space Administration., David E. Bell, Director of the

Bureau of the Budget.
Source: Public Papers of the Presidents of the United States, v. 1, 1962, pp. 669-670.

President John F. Kennedy
Cuban Missile Crisis Address
October 22, 1962

Good evening, my fellow citizens: - This Government, as promised, has maintained the closest surveillance of the Soviet military buildup on the island of Cuba. Within the past week, unmistakable evidence has established the fact that a series of offensive Missile sites is now in preparation on that imprisoned island. The purpose of these bases can be none other than to provide a nuclear strike capability against the Western Hemisphere.

Upon receiving the first preliminary hard information of this nature last Tuesday morning at 9 a.m., I directed that our surveillance be stepped up. And having now confirmed and completed our evaluation of the evidence and our decision on a course of action, this Government feels obliged to report this new crisis to you in fullest detail.

The characteristics of these new missile sites indicate two distinct types of installations. Several of them include medium range ballistic missiles, capable of carrying a nuclear warhead for a distance of more than 1000 nautical miles. Each of these missiles, in short, is capable of striking Washington, D.C., the Panama Canal, Cape Canaveral, Mexico City, or any other city in the southeastern part of the United States, in Central America, or in the Caribbean area.

Additional sites not yet completed appear to be designed for intermediate range ballistic missiles capable of traveling more than twice as far-and thus capable of striking most of the major cities in the Western Hemisphere, ranging as far north as Hudson Bay, Canada, and as far south as Lima, Peru. In addition, jet bombers, capable of carrying nuclear weapons, are now being uncrated and assembled in Cuba, while the necessary air bases are being prepared.

This urgent transformation of Cuba into an important strategic base- by the presence of these large, long-range, and clearly offensive weapons of sudden mass destruction constitutes an explicit threat to the peace and security of all the Americas, in flagrant and deliberate defiance of the Rio Pact of 1947, the traditions of this Nation and hemisphere, the joint resolution of the 87th Congress, the Charter of the United Nations, and my own public warnings to the Soviets on September 4 and 13. This action also contradicts the repeated assurances of Soviet spokesmen, both publicly and privately delivered, that the arms buildup in Cuba would retain its original defensive character, and that the Soviet Union had no need or desire to station strategic missiles on the territory of any other nation.

The size of this undertaking makes clear that it has been planned for some months. Yet only last month, after I had made clear the distinction between any introduction of ground-to- ground missiles and the existence of defensive anti-aircraft missiles, the Soviet Government publicly stated on September 11th that, and I quote, "the armaments and military equipment sent to Cuba are designed exclusively for defensive purposes," that, and I quote the Soviet Government, "there is no need for the Soviet Government to shift its weapons. . . for a retaliatory blow to any other country, for instance Cuba," and that, and I quote their government, "the Soviet Union has so powerful rockets to carry these nuclear warheads that there is no need to search for sites for them beyond the boundaries of the Soviet Union." That statement was false. Only last Thursday, as evidence of this rapid offensive buildup was already in my hand, Soviet Foreign Minister Gromyko told me in my office that he was instructed to make it clear once again, as he said his government had already done, that Soviet assistance to Cuba, and I quote, "pursued solely for the purpose of contributing to the defense capabilities of Cuba," that, and I quote him, "training by Soviet specialists of Cuban nationals in handling defensive armaments was by no means offensive, and if it were otherwise," Mr. Gromyko went on, "the Soviet Government would never become involved in rendering such assistance." That statement also was false.

Neither the United States of America nor the world community of nations can tolerate deliberate deception and offensive threats on the part of any nation, large or small. We no longer live in a world where only the actual firing of weapons represents an efficient challenge to a nation's security to constitute maximum peril. Nuclear weapons are so destructive and ballistic missiles are so swift, that any substantially increased possibility of their use or any sudden change in their deployment may well be regarded as a definite threat to peace.

For many years, both the Soviet Union and the United States, recognizing this fact, have deployed strategic nuclear weapons with great care, never upsetting the precarious status quo which insured that these weapons would not be used in the absence of some vital challenge. Our own strategic missiles have never been transferred to the territory of any other nation under a cloak of secrecy and deception; and our history - unlike that of the Soviets since the end of World War II - demonstrates that we have no desire to dominate or conquer any other nation or impose our system upon its people. Nevertheless, American citizens have become adjusted to living daily on the bull's-eye of Soviet missiles located inside the U.S.S.R. or in submarines.

In that sense, missiles in Cuba add to an already clear and present danger - although it should be noted the nations of Latin America have never previously been subjected to a potential nuclear threat.

But this secret, swift, and extraordinary buildup of Communist missiles-in an area well known to have a special and historical relationship to the United States and the nations of the Western Hemisphere, in violation of Soviet assurances, and in defiance of American and hemispheric policy - this sudden, clandestine decision to station strategic weapons for the first time outside of Soviet soil - is a deliberately provocative and unjustified change in the status quo which cannot be accepted by this country, if our courage and our commitments are ever to be trusted again by either friend or foe.

The 1930's taught us a clear lesson: aggressive conduct, if allowed to go unchecked and unchallenged, ultimately leads to war. This nation is opposed to war. We are also true to our word. Our unswerving objective, therefore, must be to prevent the use of these missiles against this or any other country, and to secure their withdrawal or elimination from the Western Hemisphere.

Our policy has been one of patience and restraint, as befits a peaceful and powerful nation, which leads a worldwide alliance. We have been determined not to be diverted from our central concerns by mere irritants and fanatics. But now further action is required - and it is under way; and these actions may only be the beginning. We will not prematurely or unnecessarily risk the costs of worldwide nuclear war in which even the fruits of victory would be ashes in our mouth - but neither will we shrink from that risk at any time it must be faced.

Acting, therefore, in the defense of our own security and of the entire Western Hemisphere, and under the authority end trusted to me by the Constitution as endorsed by the resolution of the Congress, I have directed that the following initial steps be taken immediately:

First: To halt this offensive buildup, a strict quarantine on all offensive military in equipment under shipment to Cuba is being initiated. All ships of any kind bound for Cuba from whatever nation or port will, if found to contain cargoes of offensive weapons, be turned back. This quarantine will be extended, if needed, to other types of cargo and carriers. We are not at this time, however, denying the necessities of life as the Soviets attempted to do in their Berlin blockade of I948-

Second: I have directed the continued and increased close surveillance of Cuba and its military buildup. The foreign ministers of the OAS, in their communiqué of October 6th, rejected secrecy on such matters in this hemisphere. Should these offensive military preparations continue, thus increasing the threat to the hemisphere, further action will be justified. I have directed the Armed Forces to prepare for any eventualities; and I trust that in the interest of both the Cuban people and the Soviet technicians at the sites, the hazards to all concerned of continuing this threat will be recognized.

Third: It shall be the policy of this Nation to regard any nuclear missile launched from Cuba against any nation in the Western Hemisphere as an attack by the Soviet Union on the United States, requiring a full retaliatory response upon the Soviet Union.

Fourth: As a necessary military precaution., I have reinforced our base at Guantanamo, evacuated today the dependents of our personnel there, and ordered additional military units to be on a standby alert basis.

Fifth: We are calling tonight for an immediate meeting of the Organ of Consultation under the Organization of American States, to consider this threat to hemispheric security and to invoke articles 6 and 8 of the Rio Treaty in support of all necessary action. The United Nations Charter allows for regional security arrangements - and the nations of this hemisphere decided long ago against the military presence of outside powers. Our other allies around the world have also been alerted.

Sixth: Under the Charter of the United Nations, we are asking tonight that an emergency meeting of the Security Council be convoked without delay to take action against this latest Soviet threat to world peace. Our resolution will call for the prompt dismantling and withdrawal of all offensive weapons in Cuba, under the supervision of U.N. observers, before the quarantine can be lifted.

Seventh and finally: I call upon Chairman Khrushchev to halt and eliminate this clandestine, reckless, and provocative threat to world peace and to stable relations between our two nations. I call upon him further to abandon this course of world domination, and to join in an historic effort to end the perilous arms race and to transform the history of man. He has an opportunity now to move the world back from the abyss of destruction - by returning to his government's own words that it had no need to station missiles outside its own territory, and withdrawing these weapons from Cuba - by refraining from any action which will widen or deepen the present crisis - and then by participating in a search for peaceful and permanent solutions.

This Nation is prepared to present its case against the Soviet threat to peace, and our own proposals for a peaceful world, at any time and in any forum - in the OAS, in the United Nations, or in any other meeting that could be useful - without limiting our freedom of action.

We have in the past made strenuous efforts to limit the spread of nuclear weapons. We have proposed the elimination of all arms and military bases in a fair and effective disarmament treaty. We are prepared to discuss new proposals for the removal of tensions on both sides - including the possibilities of a genuinely independent Cuba, free to determine its own destiny. We have no wish to war with the Soviet Union - for we are a peaceful people who desire to live in peace with all other peoples. But it is difficult to settle or even discuss these problems in an atmosphere of intimidation. That is why this latest Soviet threat - or any oilier threat which is made either independently or in response to our actions this week - must and will be met with determination. Any hostile move anywhere in the world against the safety and freedom of peoples to whom we are committed - including in particular the brave people of West Berlin - will be met by whatever action is needed.

Finally, I want to say a few words to the captive people of Cuba, to whom this speech is being directly carried by special radio facilities. I speak to you as a friend, as one who knows of your deep attachment to your fatherland, as one who shares your aspirations for liberty and justice for all. And I have watched and the American people have watched with deep sorrow how your nationalist revolution was betrayed - and how your fatherland fell under foreign domination. Now your leaders are no longer Cuban leaders inspired by Cuban ideals.

They are puppets and agents of an international conspiracy which has turned Cuba against your friends and neighbors in the Americas - and turned it into the first Latin American country to become a target for nuclear war - the first Latin American country to have these weapons on its soil.

These new weapons are not in your interest. They contribute nothing to your peace and well-being. They can only undermine it. But this country has no wish to cause you to suffer or to impose any system upon you. We know that your lives and land are being used as pawns by those who deny your freedom.

Many times in the past, the Cuban people have risen to throw out tyrants who destroyed their liberty. And I have no doubt that most Cubans today look forward to the time when they will be truly from foreign domination, free to choose their own leaders, free to select their own system, free to own their own land, free to speak and write and worship without fear or degradation. And then shall Cuba be welcomed back to the society of free nations and to the association of nations of this hemisphere.

My fellow citizens: let no one doubt that this is a difficult and dangerous effort on which we have set out. No one can foresee precisely what course it will take or what costs or casualties will be incurred. Many months of sacrifice and self-discipline lie ahead - months in which both our patience and our will be tested - months in which many threats and denunciations will keep us aware of our dangers. But the greatest danger of all would be to do nothing.

The path we have chosen for the present is full of hazards, as all paths are - but it is the one most consistent with our character and courage as a nation and our commitments around the world. The cost of freedom is always high - but Americans have always paid it. And one path we shall never choose, and that is the path of surrender or submission.

Our goal is not the victory of might, but the vindication of right-not peace at the expense of freedom, but both peace and freedom, here in this hemisphere, and, we hope, around the world. God willing, that goal will be achieved.

Thank you and good night.

JOHN F. KENNEDY

35th President of the United States: 1961 - 1963

Annual Message to the Congress on the State of the Union.

January 14, 1963

[As delivered in person before a joint session]

Mr. Vice President, Mr. Speaker, Members of the 88th Congress:

I congratulate you all--not merely on your electoral victory but on your selected role in history. For you and I are privileged to serve the great Republic in what could be the most decisive decade in its long history. The choices we make, for good or ill, may well shape the state of the Union for generations yet to come.

Little more than 100 weeks ago I assumed the office of President of the United States. In seeking the help of the Congress and our countrymen, I pledged no easy answers. I pledged--and asked--only toil and dedication. These the Congress and the people have given in good measure. And today, having witnessed in recent months a heightened respect for our national purpose and power--having seen the courageous calm of a united people in a perilous hour--and having observed a steady improvement in the opportunities and well-being of our citizens--I can report to you that the state of this old but youthful Union, in the 175th year of its life, is good.

In the world beyond our borders, steady progress has been made in building a world of order. The people of West Berlin remain both free and secure. A settlement, though still precarious, has been reached in Laos. The spearpoint of aggression has been blunted in Viet-Nam. The end of agony may be in sight in the Congo. The doctrine of troika is dead. And, while danger continues, a deadly threat has been removed in Cuba.

At home, the recession is behind us. Well over a million more men and women are working today than were working 2 years ago. The average factory workweek is once again more than 40 hours; our industries are turning out more goods than ever before; and more than half of the manufacturing capacity that lay silent and wasted 100 weeks ago is humming with activity.

In short, both at home and abroad, there may now be a temptation to relax. For the road has been long, the burden heavy, and the pace consistently urgent.

But we cannot be satisfied to rest here. This is the side of the hill, not the top. The mere absence of war is not peace. The mere absence of recession is not growth. We have made a beginning--but we have only begun.

Now the time has come to make the most of our gains--to translate the renewal of our national strength into the achievement of our national purpose.

II.

America has enjoyed 22 months of uninterrupted economic recovery. But recovery is not enough. If we are to prevail in the long run, we must expand the long-run strength of our economy. We must move along the path to a higher rate of growth and full employment.

For this would mean tens of billions of dollars more each year in production, profits, wages, and public revenues. It would mean an end to the persistent slack which has kept our unemployment at or above 5 percent for 61 out of the past 62 months--and an end to the growing pressures for such restrictive measures as the 35-hour week, which alone could increase hourly labor costs by as much as 14 percent, start a new wage-price spiral of inflation, and undercut our efforts to compete with other nations.

To achieve these greater gains, one step, above all, is essential--the enactment this year of a substantial reduction and revision in Federal income taxes.

For it is increasingly clear--to those in Government, business, and labor who are responsible for our economy's success--that our obsolete tax system exerts too heavy a drag on private purchasing power, profits, and employment. Designed to check inflation in earlier years, it now checks growth instead. It discourages extra effort and risk. It distorts the use of resources. It invites recurrent recessions, depresses our Federal revenues, and causes chronic budget deficits.

Now, when the inflationary pressures of the war and the post-war years no longer threaten, and the dollar commands new respect--now, when no military crisis strains our resources--now is the time to act. We cannot afford to be timid or slow. For this is the most urgent task confronting the Congress in 1963.

In an early message, I shall propose a permanent reduction in tax rates which will lower liabilities by $13.5 billion. Of this, $11 billion results from reducing individual tax rates, which now range between 20 and 91 percent, to a more sensible range of 14 to 65 percent, with a split in the present first bracket. Two and one-half billion dollars results from reducing corporate tax rates, from 52 percent--which gives the Government today a majority interest in profits--to the permanent pre-Korean level of 47 percent. This is in addition to the more than $2 billion cut in corporate tax liabilities resulting from last year's investment credit and depreciation reform.

To achieve this reduction within the limits of a manageable budgetary deficit, I urge: first, that these cuts be phased over 3 calendar years, beginning in 1963 with a cut of some $6 billion at annual rates; second, that these reductions be coupled with selected structural changes, beginning in 1964, which will broaden the tax base, end unfair or unnecessary preferences, remove or lighten certain hardships, and in the net offset some $3.5 billion of the revenue loss; and third, that budgetary receipts at the outset be increased by $1.5 billion a year, without any change in tax liabilities, by gradually shifting the tax payments of large corporations to a more current time schedule. This combined program, by increasing the amount of our national income, will in time result in still higher Federal revenues. It is a fiscally responsible program--the surest and the soundest way of achieving in time a balanced budget in a balanced full employment economy.

This net reduction in tax liabilities of $10 billion will increase the purchasing power of American families and business enterprises in every tax bracket, with greatest increase going to our low-income consumers. It will, in addition, encourage the initiative and risk-taking on which our free system depends--induce more investment, production, and capacity use--help provide the 2 million new jobs we need every year--and reinforce the American principle of additional reward for additional effort.

I do not say that a measure for tax reduction and reform is the only way to achieve these goals.

--No doubt a massive increase in Federal spending could also create jobs and growth--but, in today's setting, private consumers, employers, and investors should be given a full opportunity first.

--No doubt a temporary tax cut could provide a spur to our economy--but a long run problem compels a long-run solution.

--No doubt a reduction in either individual or corporation taxes alone would be of great help--but corporations need customers and job seekers need jobs.

--No doubt tax reduction without reform would sound simpler and more attractive to many--but our growth is also hampered by a host of tax inequities and special preferences which have distorted the flow of investment.

--And, finally, there are no doubt some who would prefer to put off a tax cut in the hope that ultimately an end to the cold war would make possible an equivalent cut in expenditures--but that end is not in view and to wait for it would be costly and self-defeating.

In submitting a tax program which will, of course, temporarily increase the deficit but can ultimately end it--and in recognition of the need to control expenditures--I will shortly submit a fiscal 1964 administrative budget which, while allowing for needed rises in defense, space, and fixed interest charges, holds total expenditures for all other purposes below this year's level.

This requires the reduction or postponement of many desirable programs, the absorption of a large part of last year's Federal pay raise through personnel and other economies, the termination of certain installations and projects, and the substitution in several programs of private for public credit. But I am convinced that the enactment this year of tax reduction and tax reform overshadows all other domestic problems in this Congress. For we cannot for long lead the cause of peace and freedom, if we ever cease to set the pace here at home.

III.

Tax reduction alone, however, is not enough to strengthen our society, to provide opportunities for the four million Americans who are born every year, to improve the lives of 32 million Americans who live on the outskirts of poverty.

The quality of American life must keep pace with the quantity of American goods.

This country cannot afford to be materially rich and spiritually poor.

Therefore, by holding down the budgetary cost of existing programs to keep within the limitations I have set, it is both possible and imperative to adopt other new measures that we cannot afford to postpone.

These measures are based on a series of fundamental premises, grouped under four related headings:

First, we need to strengthen our Nation by investing in our youth:

--The future of any country which is dependent upon the will and wisdom of its citizens is damaged, and irreparably damaged, whenever any of its children is not educated to the full extent of his talent, from grade school through graduate school. Today, an estimated 4 out of every 10 students in the 5th grade will not even finish high school--and that is a waste we cannot afford.

--In addition, there is no reason why one million young Americans, out of school and out of work, should all remain unwanted and often untrained on our city streets when their energies can be put to good use.

--Finally, the overseas success of our Peace Corps volunteers, most of them young men and women carrying skills and ideas to needy people, suggests the merit of a similar corps serving our own community needs: in mental hospitals, on Indian reservations, in centers for the aged or for young delinquents, in schools for the illiterate or the handicapped. As the idealism of our youth has served world peace, so can it serve the domestic tranquility.

Second, we need to strengthen our Nation by safeguarding its health:

--Our working men and women, instead of being forced to beg for help from public charity once they are old and ill, should start contributing now to their own retirement health program through the Social Security System.

--Moreover, all our miracles of medical research will count for little if we cannot reverse the growing nationwide shortage of doctors, dentists, and nurses, and the widespread shortages of nursing homes and modern urban hospital facilities. Merely to keep the present ratio of doctors and dentists from declining any further, we must over the next 10 years increase the capacity of our medical schools by 50 percent and our dental schools by 100 percent.

--Finally, and of deep concern, I believe that the abandonment of the mentally ill and the mentally retarded to the grim mercy of custodial institutions too often inflicts on them and on their families a needless cruelty which this Nation should not endure. The incidence of mental retardation in this country is three times as high as that of Sweden, for example--and that figure can and must be reduced.

Third, we need to strengthen our Nation by protecting the basic rights of its citizens:

--The right to competent counsel must be assured to every man accused of crime in Federal court, regardless of his means.

--And the most precious and powerful right in the world, the right to vote in a free American election, must not be denied to any citizen on grounds of his race or color. I wish that all qualified Americans permitted to vote were willing to vote, but surely in this centennial year of Emancipation all those who are willing to vote should always be permitted.

Fourth, we need to strengthen our Nation by making the best and the most economical use of its resources and facilities:

--Our economic health depends on healthy transportation arteries; and I believe the way to a more modern, economical choice of national transportation service is through increased competition and decreased regulation. Local mass transit, faring even worse, is as essential a community service as hospitals and highways. Nearly three-fourths of our citizens live in urban areas, which occupy only 2 percent of our land--and if local transit is to survive and relieve the congestion of these cities, it needs Federal stimulation and assistance.

--Next, this Government is in the storage and stockpile business to the melancholy tune of more than $ 16 billion. We must continue to support farm income, but we should not pile more farm surpluses on top of the $7.5 billion we already own. We must maintain a stockpile of strategic materials, but the $8.5 billion we have acquired--for reasons both good and bad--is much more than we need; and we should be empowered to dispose of the excess in ways which will not cause market disruption.

--Finally, our already overcrowded national parks and recreation areas will have twice as many visitors 10 years from now as they do today. If we do not plan today for the future growth of these and other great natural assets--not only parks and forests but wildlife and wilderness preserves, and water projects of all kinds--our children and their children will be poorer in every sense of the word.

These are not domestic concerns alone. For upon our achievement of greater vitality and strength here at home hang our fate and future in the world: our ability to sustain and supply the security of free men and nations, our ability to command their respect for our leadership, our ability to expand our trade without threat to our balance of payments, and our ability to adjust to the changing demands of cold war competition and challenge.

We shall be judged more by what we do at home than by what we preach abroad. Nothing we could do to help the developing countries would help them half as much as a booming U.S. economy. And nothing our opponents could do to encourage their own ambitions would encourage them half as much as a chronic lagging U.S. economy. These domestic tasks do not divert energy from our security--they provide the very foundation for freedom's survival and success,

IV.

Turning to the world outside, it was only a few years ago--in Southeast Asia, Africa, Eastern Europe, Latin America, even outer space--that communism sought to convey the image of a unified, confident, and expanding empire, closing in on a sluggish America and a free world in disarray. But few people would hold to that picture today.

In these past months we have reaffirmed the scientific and military superiority of freedom. We have doubled our efforts in space, to assure us of being first in the future. We have undertaken the most far-reaching defense improvements in the peacetime history of this country. And we have maintained the frontiers of freedom from Viet-Nam to West Berlin.

But complacency or self-congratulation can imperil our security as much as the weapons of tyranny. A moment of pause is not a promise of peace. Dangerous problems remain from Cuba to the South China Sea. The world's prognosis prescribes, in short, not a year's vacation for us, but a year of obligation and opportunity.

Four special avenues of opportunity stand out: the Atlantic Alliance, the developing nations, the new Sino-Soviet difficulties, and the search for worldwide peace.

V.

First, how fares the grand alliance? Free Europe is entering into a new phase of its long and brilliant history. The era of colonial expansion has passed; the era of national rivalries is fading; and a new era of interdependence and unity is taking shape. Defying the old prophecies of Marx, consenting to what no conqueror could ever compel, the free nations of Europe are moving toward a unity of purpose and power and policy in every sphere of activity.

For 17 years this movement has had our consistent support, both political and economic. Far from resenting the new Europe, we regard her as a welcome partner, not a rival. For the road to world peace and freedom is still long, and there are burdens which only full partners can share--in supporting the common defense, in expanding world trade, in aligning our balance of payments, in aiding the emergent nations, in concerting political and economic policies, and in welcoming to our common effort other industrialized nations, notably Japan, whose remarkable economic and political development of the 1950's permits it now to play on the world scene a major constructive role.

No doubt differences of opinion will continue to get more attention than agreements on action, as Europe moves from independence to more formal interdependence. But these are honest differences among honorable associates--more real and frequent, in fact, among our Western European allies than between them and the United States. For the unity of freedom has never relied on uniformity of opinion. But the basic agreement of this alliance on fundamental issues continues.

The first task of the alliance remains the common defense. Last month Prime Minister Macmillan and I laid plans for a new stage in our long cooperative effort, one which aims to assist in the wider task of framing a common nuclear defense for the whole alliance.

The Nassau agreement recognizes that the security of the West is indivisible, and so must be our defense. But it also recognizes that this is an alliance of proud and sovereign nations, and works best when we do not forget it. It recognizes further that the nuclear defense of the West is not a matter for the present nuclear powers alone--that France will be such a power in the future--and that ways must be found without increasing the hazards of nuclear diffusion, to increase the role of our other partners in planning, manning, and directing a truly multilateral nuclear force within an increasingly intimate NATO alliance. Finally, the Nassau agreement recognizes that nuclear defense is not enough, that the agreed NATO levels of conventional strength must be met, and that the alliance cannot afford to be in a position of having to answer every threat with nuclear weapons or nothing.

We remain too near the Nassau decisions, and too far from their full realization, to know their place in history. But I believe that, for the first time, the door is open for the nuclear defense of the alliance to become a source of confidence, instead of a cause of contention.

The next most pressing concern of the alliance is our common economic goals of trade and growth. This Nation continues to be concerned about its balance-of-payments deficit, which, despite its decline, remains a stubborn and troublesome problem. We believe, moreover, that closer economic ties among all free nations are essential to prosperity and peace. And neither we nor the members of the European Common Market are so affluent that we can long afford to shelter high cost farms or factories from the winds of foreign competition, or to restrict the channels of trade with other nations of the free world. If the Common Market should move toward protectionism and restrictionism, it would undermine its, own basic principles. This Government means to use the authority conferred on it last year by the Congress to encourage trade expansion on both sides of the Atlantic and around the world.

VI,

Second, what of the developing and nonaligned nations? They were shocked by the Soviets' sudden and secret attempt to transform Cuba into a nuclear striking base--and by Communist China's arrogant invasion of India. They have been reassured by our prompt assistance to India, by our support through the United Nations of the Congo's unification, by our patient search for disarmament, and by the improvement in our treatment of citizens and visitors whose skins do not happen to be white. And as the older colonialism recedes, and the neocolonialism of the Communist powers stands out more starkly than ever, they realize more clearly that the issue in the world struggle is not communism versus capitalism, but coercion versus free choice.

They are beginning to realize that the longing for independence is the same the world over, whether it is the independence of West Berlin or Viet-Nam. They are beginning to realize that such independence runs athwart all Communist ambitions but is in keeping with our own--and that our approach to their diverse needs is resilient and resourceful, while the Communists are still relying on ancient doctrines and dogmas.

Nevertheless it is hard for any nation to focus on an external or subversive threat to its independence when its energies are drained in daily combat with the forces of poverty and despair. It makes little sense for us to assail, in speeches and resolutions, the horrors of communism, to spend $50 billion a year to prevent its military advance--and then to begrudge spending, largely on American products, less than one-tenth of that amount to help other nations strengthen their independence and cure the social chaos in which communism always has thrived.

I am proud--and I think most Americans are proud--of a mutual defense and assistance program, evolved with bipartisan support in three administrations, which has, with all its recognized problems, contributed to the fact that not a single one of the nearly fifty U.N. members to gain independence since the Second World War has succumbed to Communist control.

I am proud of a program that has helped to arm and feed and clothe millions of people who live on the front lines of freedom.

I am especially proud that this country has put forward for the 60's a vast cooperative effort to achieve economic growth and social progress throughout the Americas--the Alliance for Progress.

I do not underestimate the difficulties that we face in this mutual effort among our close neighbors, but the free states of this hemisphere, working in close collaboration, have begun to make this alliance a living reality. Today it is feeding one out of every four school age children in Latin America an extra food ration from our farm surplus. It has distributed 1.5 million school books and is building 17,000 classrooms. It has helped resettle tens of thousands of farm families on land they can call their own. It is stimulating our good neighbors to more self-help and self-reform--fiscal, social, institutional, and land reforms. It is bringing new housing and hope, new health and dignity, to millions who were forgotten. The men and women of this hemisphere know that the alliance cannot Succeed if it is only another name for United States handouts--that it can succeed only as the Latin American nations themselves devote their best effort to fulfilling its goals.

This story is the same in Africa, in the Middle East, and in Asia. Wherever nations are willing to help themselves, we stand ready to help them build new bulwarks of freedom. We are not purchasing votes for the cold war; we have gone to the aid of imperiled nations, neutrals and allies alike. What we do ask--and all that we ask--is that our help be used to best advantage, and that their own efforts not be diverted by needless quarrels with other independent nations.

Despite all its past achievements, the continued progress of the mutual assistance program requires a persistent discontent with present performance. We have been reorganizing this program to make it a more effective, efficient instrument--and that process will continue this year.

But free world development will still be an uphill struggle. Government aid can only supplement the role of private investment, trade expansion, commodity stabilization, and, above all, internal self-improvement. The processes of growth are gradual--bearing fruit in a decade, not a day. Our successes will be neither quick nor dramatic. But if these programs were ever to be ended, our failures in a dozen countries would be sudden and certain.

Neither money nor technical assistance, however, can be our only weapon against poverty. In the end, the crucial effort is one of purpose, requiring the fuel of finance but also a torch of idealism. And nothing carries the spirit of this American idealism more effectively to the far corners of the earth than the American Peace Corps.

A year ago, less than 900 Peace Corps volunteers were on the job. A year from now they will number more than 9,000--men and women, aged 18 to 79, willing to give 2 years of their lives to helping people in other lands.

There are, in fact, nearly a million Americans serving their country and the cause of freedom in overseas posts, a record no other people can match. Surely those of us who stay at home should be glad to help indirectly; by supporting our aid programs; .by opening our doors to foreign visitors and diplomats and students; and by proving, day by day, by deed as well as word, that we are a just and generous people.

VII.

Third, what comfort can we take from the increasing strains and tensions within the Communist bloc? Here hope must be tempered with caution. For the Soviet-Chinese disagreement is over means, not ends. A dispute over how best to bury the free world is no grounds for Western rejoicing.

Nevertheless, while a strain is not a fracture, it is clear that the forces of diversity are at work inside the Communist camp, despite all the iron disciplines of regimentation and all the iron dogmatism's of ideology. Marx is proven wrong once again: for it is the closed Communist societies, not the free and open societies which carry within themselves the seeds of internal disintegration.

The disarray of the Communist empire has been heightened by two other formidable forces. One is the historical force of nationalism--and the yearning of all men to be free. The other is the gross inefficiency of their economies. For a closed society is not open to ideas of progress--and a police state finds that it cannot command the grain to grow.

New nations asked to choose between two competing systems need only compare conditions in East and West Germany, Eastern and Western Europe, North and South Viet-Nam. They need only compare the disillusionment of Communist Cuba with the promise of the Alliance for Progress. And all the world knows that no successful system builds a wall to keep its people in and freedom out--and the wall of shame dividing Berlin is a symbol of Communist failure.

VIII.

Finally, what can we do to move from the present pause toward enduring peace? Again I would counsel caution. I foresee no spectacular reversal in Communist methods or goals. But if all these trends and developments can persuade the Soviet Union to walk the path of peace, then let her know that all free nations will journey with her. But until that choice is made, and until the world can develop a reliable system of international security, the free peoples have no choice but to keep their arms nearby.

This country, therefore, continues to require the best defense in the world--a defense which is suited to the sixties. This means, unfortunately, a rising defense budget--for there is no substitute for adequate defense, and no "bargain basement" way of achieving it. It means the expenditure of more than $15 billion this year on nuclear weapons systems alone, a sum which is about equal to the combined defense budgets of our European Allies.

But it also means improved air and missile defenses, improved civil defense, a strengthened anti-guerrilla capacity and, of prime importance, more powerful and flexible nonnuclear forces. For threats of massive retaliation may not deter piecemeal aggression--and a line of destroyers in a quarantine, or a division of well-equipped men on a border, may be more useful to our real security than the multiplication of awesome weapons beyond all rational need.

But our commitment to national safety is not a commitment to expand our military establishment indefinitely. We do not dismiss disarmament as merely an idle dream. For we believe that, in the end, it is the only way to assure the security of all without impairing the interests of any. Nor do we mistake honorable negotiation for appeasement. While we shall never weary in the defense of freedom, neither shall we ever abandon the pursuit of peace.

In this quest, the United Nations requires our full and continued support. Its value in serving the cause of peace has been shown anew in its role in the West New Guinea settlement, in its use as a forum for the Cuban crisis, and in its task of unification in the Congo. Today the United Nations is primarily the protector of the small and the weak, and a safety valve for the strong. Tomorrow it can form the framework for a world of law--a world in which no nation dictates the destiny of another, and in which the vast resources now devoted to destructive means will serve constructive ends.

In short, let our adversaries choose. If they choose peaceful competition, they shall have it. If they come to realize that their ambitions cannot succeed--if they see their "wars of liberation" and subversion will ultimately fail--if they recognize that there is more security in accepting inspection than in permitting new nations to master the black arts of nuclear war--and if they are willing to turn their energies, as we are, to the great unfinished tasks of our own peoples--then, surely, the areas of agreement can be very wide indeed: a clear understanding about Berlin, stability in Southeast Asia, an end to nuclear testing, new checks on surprise or accidental attack, and, ultimately, general and complete disarmament.

IX.

For we seek not the worldwide victory of one nation or system but a worldwide victory of man. The modern globe is too small, its weapons are too destructive, and its disorders are too contagious to permit any other kind of victory.

To achieve this end, the United States will continue to spend a greater portion of its national production than any other people in the free world. For 15 years no other free nation has demanded so much of itself. Through hot wars and cold, through recession and prosperity, through the ages of the atom and outer space, the American people have never faltered and their faith has never flagged. If at times our actions seem to make life difficult for others, it is only because history has made life difficult for us all.

But difficult days need not be dark. I think these are proud and memorable days in the cause of peace and freedom. We are proud, for example, of Major Rudolf Anderson who gave his life over the island of Cuba. We salute Specialist James Allen Johnson who died on the border of South Korea. We pay honor to Sergeant Gerald Pendell who was killed in Viet-Nam. They are among the many who in this century, far from home, have died for our country. Our task now, and the task of all Americans is to live up to their commitment.

My friends: I close on a note of hope. We are not lulled by the momentary calm of the sea or the somewhat clearer skies above. We know the turbulence that lies below, and the storms that are beyond the horizon this year. But now the winds of change appear to be blowing more strongly than ever, in the world of communism as well as our own. For 175 years we have sailed with those winds at our back, and with the tides of human freedom in our favor. We steer our ship with hope, as Thomas Jefferson said, "leaving Fear astern."

Today we still welcome those winds of change--and we have every reason to believe that our tide is running strong. With thanks to Almighty God for seeing us through a perilous passage, we ask His help anew in guiding the "Good Ship Union."

John F. Kennedy, Annual Message to the Congress on the State of the Union. Online by Gerhard Peters and John T. Woolley, The American Presidency Project https://www.presidency.ucsb.edu/node/237129

JFK speaks on Dudley Field

ADDRESS AT VANDERBILT UNIVERSITY

JOHN F. KENNEDY

35th President of the United States: 1961 - 1963

Remarks in Nashville at the 90th Anniversary Convocation of Vanderbilt University

May 18, 1963

Mr. Chancellor, Mr. Vanderbilt, Senator Kefauver, Senator Gore, Congressman Fulton, Congressman Evins, Congressman Bass, Congressman Everett, Tom Murray, distinguished guests, members of the judiciary, the Army Corps of Engineers of the Tennessee Valley:

I first of all want to express my warm appreciation to the Governor and to the Mayor of this State and city and to the people for a very generous welcome, and particularly to all those young men and women who lined the street and played music for us as we drove into this stadium. We are glad they are here with us, and we feel the musical future of this city and State is assured.

Many things bring us together today. We are saluting the 90th anniversary of Vanderbilt University, which has grown from a small Tennessee university and institution to one of our Nation's greatest, with 7 different colleges, and with more than half of its 4200 students from outside of the State of Tennessee.

And we are saluting the 30th anniversary of the Tennessee Valley Authority, which transformed a parched, depressed, and floodravaged region into a fertile, productive center of industry, science, and agriculture.

We are saluting--by initiating construction of a dam in his name--a great Tennessee statesman, Cordell Hull, the father of reciprocal trade, the grandfather of the United Nations, the Secretary of State who presided over the transformation of this Nation from a life of isolation and almost indifference to a state of responsible world leadership.

And finally, we are saluting--by the recognition of a forthcoming dam in his name-J. Percy Priest, a former colleague of mine in the House of Representatives, who represented this district, this State, and this Nation in the Congress for 16 turbulent years--years which witnessed the crumbling of empires, the splitting of the atom, the conquest of one threat to freedom, and the emergence of still another.

If there is one unchanging theme that runs throughout these separate stories, it is that everything changes but change itself. We live in an age of movement and change, both evolutionary and revolutionary, both good and evil--and in such an age a university has a special obligation to hold fast to the best of the past and move fast to the best of the future.

Nearly 100 years ago Prince Bismarck said that one-third of the students of German universities broke down from overwork, another third broke down from dissipation, and the other third ruled Germany. I do not know which third of the student body of Vanderbilt is here today, but I am confident we are talking to the future rulers of Tennessee and America in the spirit of this university.

The essence of Vanderbilt is still learning, the essence of its outlook is still liberty, and liberty and learning will be and must be the touchstones of Vanderbilt University and of any free university in this country or the world. I say two touchstones, yet they are almost inseparable, inseparable if not indistinguishable, for liberty without learning is always in peril, and learning without liberty is always in vain.

This State, this city, this campus, have stood long for both human rights and human enlightenment--and let that forever be true. This Nation is now engaged in a continuing debate about the rights of a portion of its citizens. That will go on, and those rights will expand until the standard first forged by the Nation's founders has been reached, and all Americans enjoy equal opportunity and liberty under law.

But this Nation was not founded solely on the principle of citizens' rights. Equally important, though too often not discussed, is the citizen's responsibility. For our privileges can be no greater than our obligations. The protection of our rights can endure no longer than the performance of our responsibilities. Each can be neglected only at the peril of the other. I speak to you today, therefore, not of your rights as Americans, but of your responsibilities. They are many in number and different in nature. They do not rest with equal weight upon the shoulders of all. Equality of opportunity does not mean equality of responsibility. All Americans must be responsible citizens, but some must be more responsible than others, by virtue of their public or their private position, their role in the family or community, their prospects for the future, or their legacy from the past.

Increased responsibility goes with increased ability, for "of those to whom much is given, much is required."

Commodore Vanderbilt recognized this responsibility and his recognition made possible the establishment of a great institution of learning for which he will be long remembered after his steamboats and railroads have been forgotten. I speak in particular, therefore, of the responsibility of the educated citizen, including the students, the faculty, and the alumni of this great institution. The creation and maintenance of Vanderbilt University, like that of all great universities, has required considerable effort and expenditure, and I cannot believe that all of this was undertaken merely to give this school's graduates an economic advantage in the life struggle. "Every man sent out from a university," said Professor Woodrow Wilson, "Every man sent out from a university should be a man of his Nation, as well as a man of his time."

You have responsibilities, in short, to use your talents for the benefit of the society which helped develop those talents. You must decide, as Goethe put it, whether you will be an anvil or a hammer, whether you will give to the world in which you were reared and educated the broadest possible benefits of that education. Of the many special obligations incumbent upon an educated citizen, I would cite three as outstanding: your obligation to the pursuit of learning, your obligation to serve the public, your obligation to uphold the law.

If the pursuit of learning is not defended by the educated citizen, it will not be defended at all. For there will always be those who scoff at intellectuals, who cry out against research, who seek to limit our educational system. Modern cynics and skeptics see no more reason for landing a man on the moon, which we shall do, than the cynics and skeptics of half a millennium ago saw for the discovery of this country. They see no harm in paying those to whom they entrust the minds of their children a smaller wage than is paid to those to whom they entrust the care of their plumbing.

But the educated citizen knows how much more there is to know. He knows that "knowledge is power," more so today than ever before. He knows that only an educated and informed people will be a free people, that the ignorance of one voter in a democracy impairs the security of all, and that if we can, as Jefferson put it, "enlighten the people generally ... tyranny and the oppressions of mind and body will vanish, like evil spirits at the dawn of day." And, therefore, the educated citizen has a special obligation to encourage the pursuit of learning, to promote exploration of the unknown, to preserve the freedom of inquiry, to support the advancement of research, and to assist at every level of government the improvement of education for all Americans, from grade school to graduate school.

Secondly, the educated citizen has an obligation to serve the public. He may be a precinct worker or President. He may give his talents at the courthouse, the State house, the White House. He may be a civil servant or a Senator, a candidate or a campaign worker, a winner or a loser. But he must be a participant and not a spectator.

"At the Olympic games," Aristotle wrote, "it is not the finest and strongest men who are crowned, but they who enter the lists-for out of these the prize-men are elected. So, too, in life, of the honorable and the good, it is they who act who rightly win the prizes."

I urge all of you today, especially those who are students, to act, to enter the lists of public service and rightly win or lose the prize. For we can have only one form of aristocracy in this country, as Jefferson wrote long ago in rejecting John Adams' suggestion of an artificial aristocracy of wealth and birth. It is, he wrote, the natural aristocracy of character and talent, and the best form of government, he added, was that which selected these men for positions of responsibility.

I would hope that all educated citizens would fulfill this obligation--in politics, in Government, here in Nashville, here in this State, in the Peace Corps, in the Foreign Service, in the Government Service, in the Tennessee Valley, in the world. You will find the pressures greater than the pay. You may endure more public attacks than support. But you will have the unequaled satisfaction of knowing that your character and talent are contributing to the direction and success of this free society.

Third, and finally, the educated citizen has an obligation to uphold the law. This is the obligation of every citizen in a free and peaceful society--but the educated citizen has a special responsibility by the virtue of his greater understanding. For whether he has ever studied history or current events, ethics or civics, the rules of a profession or the tools of a trade, he knows that only a respect for the law makes it possible for free men to dwell together in peace and progress.

He knows that law is the adhesive force in the cement of society, creating order out of chaos and coherence in place of anarchy. He knows that for one man to defy a law or court order he does not like is to invite others to defy those which they do not like, leading to a breakdown of all justice and all order. He knows, too, that every fellowman is entitled to be regarded with decency and treated with dignity. Any educated citizen who seeks to subvert the law, to suppress freedom, or to subject other human beings to acts that are less than human, degrades his heritage, ignores his learning, and betrays his obligation.

Certain other societies may respect the rule of force--we respect the rule of law.

The Nation, indeed the whole world, has watched recent events in the United States with alarm and dismay. No one can deny the complexity of the problems involved in assuring to all of our citizens their full fights as Americans. But no one can gainsay the fact that the determination to secure these rights is in the highest traditions of American freedom.

In these moments of tragic disorder, a special burden rests on the educated men and women of our country to reject the temptations of prejudice and violence, and to reaffirm the values of freedom and law on which our free society depends.

When Bishop McTyeire, 90 years ago, proposed it to Commodore Vanderbilt, he said, "Commodore, our country has been torn to pieces by a civil war .... We want to repair this damage." And Commodore Vanderbilt reportedly replied, "I want to unite this country, and all sections of it, so that all our people will be one." His response, his recognition of his obligation and opportunity gave Vanderbilt University not only an endowment but also a mission. Now, 90 years later, in a time of tension, it is more important than ever to unite this country and strengthen these ties so that all of our people will be one.

Ninety years from now I have no doubt that Vanderbilt University will still be fulfilling this mission. It will still uphold learning, encourage public service, and teach respect for the law. It will neither turn its back on proven wisdom or turn its face from newborn challenge. It will still pass on to the youth of our land the full meaning of their rights and their responsibilities. And it will still be teaching the truth--the truth that makes us free and will keep us free. Thank you.

Note: The President spoke at 11:10 a.m. in the stadium at Vanderbilt University, Nashville, Tenn. His opening words referred to Alexander Heard, chancellor of the university; William H. Vanderbilt, great-grandson of Commodore Cornelius Vanderbilt, the university's founder; and U.S. Senators Estes Kefauver and Albert Gore and U.S. Representatives Richard R. Fulton, Joe L. Evins, Ross Bass, Robert A. Everett, and Tom Murray--all of Tennessee. He later referred to Frank G. Clement, Governor of Tennessee, and Beverly Briley, Mayor of Nashville.

John F. Kennedy, Remarks in Nashville at the 90th Anniversary Convocation of Vanderbilt University Online by Gerhard Peters and John T. Woolley, The American Presidency Project https://www.presidency.ucsb.edu/node/236371

AMERICAN UNIVERSITY COMMENCEMENT ADDRESS

JOHN F. KENNEDY

35th President of the United States: 1961 - 1963

Commencement Address at American University in Washington

June 10, 1963

President Anderson, members of the faculty, board of trustees, distinguished guests, my old colleague, Senator Bob Byrd, who has earned his degree through many years of attending night law school while I am earning mine in the next 30 minutes, ladies and gentlemen:

It is with great pride that I participate in this ceremony of the American University, sponsored by the Methodist Church, founded by Bishop John Fletcher Hurst, and first opened by President Woodrow Wilson in 1914. This is a young and growing university, but it has already fulfilled Bishop Hurst's enlightened hope for the study of history and public affairs in a city devoted to the making of history and to the conduct of the public's business. By sponsoring this institution of higher learning for all who wish to learn, whatever their color or their creed, the Methodists of this area and the Nation deserve the Nation's thanks, and I commend all those who are today graduating.

Professor Woodrow Wilson once said that every man sent out from a university should be a man of his nation as well as a man of his time, and I am confident that the men and women who carry the honor of graduating from this institution will continue to give from their lives, from their talents, a high measure of public service and public support.

"There are few earthly things more beautiful than a university," wrote John Masefield, in his tribute to English universities--and his words are equally true today. He did not refer to spires and towers, to campus greens and ivied walls. He admired the splendid beauty of the university, he said, because it was "a place where those who hate ignorance may strive to know, where those who perceive truth may strive to make others see."

I have, therefore, chosen this time and this place to discuss a topic on which ignorance too often abounds and the truth is too rarely perceived--yet it is the most important topic on earth: world peace.

What kind of peace do I mean? What kind of peace do we seek? Not a Pax Americana enforced on the world by American weapons of war. Not the peace of the grave or the security of the slave. I am talking about genuine peace, the kind of peace that makes life on earth worth living, the kind that enables men and nations to grow and to hope and to build a better life for their children--not merely peace for Americans but peace for all men and women--not merely peace in our time but peace for all time.

I speak of peace because of the new face of war. Total war makes no sense in an age when great powers can maintain large and relatively invulnerable nuclear forces and refuse to surrender without resort to those forces. It makes no sense in an age when a single nuclear weapon contains almost ten times the explosive force delivered by all of the allied air forces in the Second World War. It makes no sense in an age when the deadly poisons produced by a nuclear exchange would be carried by wind and water and soil and seed to the far corners of the globe and to generations yet unborn.

Today the expenditure of billions of dollars every year on weapons acquired for the purpose of making sure we never need to use them is essential to keeping the peace. But surely the acquisition of such idle stockpiles--which can only destroy and never create--is not the only, much less the most efficient, means of assuring peace.

I speak of peace, therefore, as the necessary rational end of rational men. I realize that the pursuit of peace is not as dramatic as the pursuit of war--and frequently the words of the pursuer fall on deaf ears. But we have no more urgent task.

Some say that it is useless to speak of world peace or world law or world disarmament-and that it will be useless until the leaders of the Soviet Union adopt a more enlightened attitude. I hope they do. I believe we can help them do it. But I also believe that we must reexamine our own attitude--as individuals and as a Nation--for our attitude is as essential as theirs. And every graduate of this school, every thoughtful citizen who despairs of war and wishes to bring peace, should begin by looking inward--by examining his own attitude toward the possibilities of peace, toward the Soviet Union, toward the course of the cold war and toward freedom and peace here at home.

First: Let us examine our attitude toward peace itself. Too many of us think it is impossible. Too many think it unreal. But that is a dangerous, defeatist belief. It leads to the conclusion that war is inevitable--that mankind is doomed--that we are gripped by forces we cannot control.

We need not accept that view. Our problems are manmade--therefore, they can be solved by man. And man can be as big as he wants. No problem of human destiny is beyond human beings. Man's reason and spirit have often solved the seemingly unsolvable--and we believe they can do it again.

I am not referring to the absolute, infinite concept of universal peace and good will of which some fantasies and fanatics dream. I do not deny the value of hopes and dreams but we merely invite discouragement and incredulity by making that our only and immediate goal.

Let us focus instead on a more practical, more attainable peace--based not on a sudden revolution in human nature but on a gradual evolution in human institutions--on a series of concrete actions and effective agreements which are in the interest of all concerned. There is no single, simple key to this peace--no grand or magic formula to be adopted by one or two powers. Genuine peace must be the product of many nations, the sum of many acts. It must be dynamic, not static, changing to meet the challenge of each new generation. For peace is a process--a way of solving problems.

With such a peace, there will still be quarrels and conflicting interests, as there are within families and nations. World peace, like community peace, does not require that each man love his neighbor--it requires only that they live together in mutual tolerance, submitting their disputes to a just and peaceful settlement. And history teaches us that enmities between nations, as between individuals, do not last forever. However fixed our likes and dislikes may seem, the tide of time and events will often bring surprising changes in the relations between nations and neighbors.

So let us persevere. Peace need not be impracticable, and war need not be inevitable. By defining our goal more clearly, by making it seem more manageable and less remote, we can help all peoples to see it, to draw hope from it, and to move irresistibly toward it.

Second: Let us reexamine our attitude toward the Soviet Union. It is discouraging to think that their leaders may actually believe what their propagandists write. It is discouraging to read a recent authoritative Soviet text on Military Strategy and find, on page after page, wholly baseless and incredible claims--such as the allegation that "American imperialist circles are preparing to unleash different types of wars ... that there is a very real threat of a preventive war being unleashed by American imperialists against the Soviet Union ... [and that] the political aims of the American imperialists are to enslave economically and politically the European and other capitalist countries... [and] to achieve world domination ... by means of aggressive wars."

Truly, as it was written long ago: "The wicked flee when no man pursueth." Yet it is sad to read these Soviet statements--to realize the extent of the gulf between us. But it is also a warning--a warning to the American people not to fall into the same trap as the Soviets, not to see only a distorted and desperate view of the other side, not to see conflict as inevitable, accommodation as impossible, and communication as nothing more than an exchange of threats.

No government or social system is so evil that its people must be considered as lacking in virtue. As Americans, we find communism profoundly repugnant as a negation of personal freedom and dignity. But we can still hail the Russian people for their many achievements--in science and space, in economic and industrial growth, in culture and in acts of courage.

Among the many traits the peoples of our two countries have in common, none is stronger than our mutual abhorrence of war. Almost unique, among the major world powers, we have never been at war with each other. And no nation in the history of battle ever suffered more than the Soviet Union suffered in the course of the Second World War. At least 20 million lost their lives. Countless millions of homes and farms were burned or sacked. A third of the nation's territory, including nearly two thirds of its industrial base, was turned into a wasteland--a loss equivalent to the devastation of this country east of Chicago.

Today, should total war ever break out again--no matter how--our two countries would become the primary targets. It is an ironic but accurate fact that the two strongest powers are the two in the most danger of devastation. All we have built, all we have worked for, would be destroyed in the first 24 hours. And even in the cold war, which brings burdens and dangers to so many countries, including this Nation's closest allies--our two countries bear the heaviest burdens. For we are both devoting massive sums of money to weapons that could be better devoted to combating ignorance, poverty, and disease. We are both caught up in a vicious and dangerous cycle in which suspicion on one side breeds suspicion on the other, and new weapons beget counter-weapons.

In short, both the United States and its allies, and the Soviet Union and its allies, have a mutually deep interest in a just and genuine peace and in halting the arms race. Agreements to this end are in the interests of the Soviet Union as well as ours--and even the most hostile nations can be relied upon to accept and keep those treaty obligations, and only those treaty obligations, which are in their own interest.

So, let us not be blind to our differences-but let us also direct attention to our common interests and to the means by which those differences can be resolved. And if we cannot end now our differences, at least we can help make the world safe for diversity. For, in the final analysis, our most basic common link is that we all inhabit this small planet. We all breathe the same air. We all cherish our children's future. And we are all mortal.

Third: Let us reexamine our attitude toward the cold war, remembering that we are not engaged in a debate, seeking to pile up debating points. We are not here distributing blame or pointing the finger of judgment. We must deal with the world as it is, and not as it might have been had the history of the last 18 years been different.

We must, therefore, persevere in the search for peace in the hope that constructive changes within the Communist bloc might bring within reach solutions which now seem beyond us. We must conduct our affairs in such a way that it becomes in the Communists' interest to agree on a genuine peace. Above all, while defending our own vital interests, nuclear powers must avert those confrontations which bring an adversary to a choice of either a humiliating retreat or a nuclear war. To adopt that kind of course in the nuclear age would be evidence only of the bankruptcy of our policy-or of a collective death-wish for the world.

To secure these ends, America's weapons are nonprovocative, carefully controlled, designed to deter, and capable of selective use. Our military forces are committed to peace and disciplined in self-restraint. Our diplomats are instructed to avoid unnecessary irritants and purely rhetorical hostility.

For we can seek a relaxation of tensions without relaxing our guard. And, for our part, we do not need to use threats to prove that we are resolute. We do not need to jam foreign broadcasts out of fear our faith will be eroded. We are unwilling to impose our system on any unwilling people--but we are willing and able to engage in peaceful competition with any people on earth.

Meanwhile, we seek to strengthen the United Nations, to help solve its financial problems, to make it a more effective instrument for peace, to develop it into a genuine world security system--a system capable of resolving disputes on the basis of law, of insuring the security of the large and the small, and of creating conditions under which arms can finally be abolished.

At the same time we seek to keep peace inside the non-Communist world, where many nations, all of them our friends, are divided over issues which weaken Western unity, which invite Communist intervention or which threaten to erupt into war. Our efforts in West New Guinea, in the Congo, in the Middle East, and in the Indian subcontinent, have been persistent and patient despite criticism from both sides. We have also tried to set an example for others--by seeking to adjust small but significant differences with our own closest neighbors in Mexico and in Canada.

Speaking of other nations, I wish to make one point clear. We are bound to many nations by alliances. Those alliances exist because our concern and theirs substantially overlap. Our commitment to defend Western Europe and West Berlin, for example, stands undiminished because of the identity of our vital interests. The United States will make no deal with the Soviet Union at the expense of other nations and other peoples, not merely because they are our partners, but also because their interests and ours converge.

Our interests converge, however, not only in defending the frontiers of freedom, but in pursuing the paths of peace. It is our hope--and the purpose of allied policies--to convince the Soviet Union that she, too, should let each nation choose its own future, so long as that choice does not interfere with the choices of others. The Communist drive to impose their political and economic system on others is the primary cause of world tension today. For there can be no doubt that, if all nations could refrain from interfering in the self-determination of others, the peace would be much more assured. This will require a new effort to achieve world law--a new context for world discussions. It will require increased understanding between the Soviets and ourselves. And increased understanding will require increased contact and communication. One step in this direction is the proposed arrangement for a direct line between Moscow and Washington, to avoid on each side the dangerous delays, misunderstandings, and misreadings of the other's actions which might occur at a time of crisis.

We have also been talking in Geneva about other first-step measures of arms control, designed to limit the intensity of the arms race and to reduce the risks of accidental war. Our primary long-range interest in Geneva, however, is general and complete disarmament--designed to take place by stages, permitting parallel political developments to build the new institutions of peace which would take the place of arms. The pursuit of disarmament has been an effort of this Government since the 1920's. It has been urgently sought by the past three ado ministrations. And however dim the prospects may be today, we intend to continue this effort--to continue it in order that all countries, including our own, can better grasp what the problems and possibilities of disarmament are.

The one major area of these negotiations where the end is in sight, yet where a fresh start is badly needed, is in a treaty to outlaw nuclear tests. The conclusion of such a treaty, so near and yet so far, would check the spiraling arms race in one of its most dangerous areas. It would place the nuclear powers in a position to deal more effectively with one of the greatest hazards which man faces in 1963, the further spread of nuclear arms. It would increase our security--it would decrease the prospects of war. Surely this goal is sufficiently important to require our steady pursuit, yielding neither to the temptation to give up the whole effort nor the temptation to give up our insistence on vital and responsible safeguards.

I am taking this opportunity, therefore, to announce two important decisions in this regard.

First: Chairman Khrushchev, Prime Minister Macmillan, and I have agreed that highlevel discussions will shortly begin in Moscow looking toward early agreement on a comprehensive test ban treaty. Our hopes must be tempered with the caution of history--but with our hopes go the hopes of all mankind.

Second: To make clear our good faith and solemn convictions on the matter, I now declare that the United States does not propose to conduct nuclear tests in the atmosphere so long as other states do not do so. We will not be the first to resume. Such a declaration is no substitute for a formal binding treaty, but I hope it will help us achieve one. Nor would such a treaty be a substitute for disarmament, but I hope it will help us achieve it.

Finally, my fellow Americans, let us examine our attitude toward peace and freedom here at home. The quality and spirit of our own society must justify and support our efforts abroad. We must show it in the dedication of our own lives--as many of you who are graduating today will have a unique opportunity to do, by serving without pay in the Peace Corps abroad or in the proposed National Service Corps here at home.

But wherever we are, we must all, in our daily lives, live up to the age-old faith that peace and freedom walk together. In too many of our cities today, the peace is not secure because freedom is incomplete.

It is the responsibility of the executive branch at all levels of government--local, State, and National--to provide and protect that freedom for all of our citizens by all means within their authority. It is the responsibility of the legislative branch at all levels, wherever that authority is not now adequate, to make it adequate. And it is the responsibility of all citizens in all sections of this country to respect the rights of all others and to respect the law of the land.

All this is not unrelated to world peace. "When a man's ways please the Lord," the Scriptures tell us, "he maketh even his enemies to be at peace with him." And is not peace, in the last analysis, basically a matter of human rights--the right to live out our lives without fear of devastation-the right to breathe air as nature provided it--the right of future generations to a healthy existence?

While we proceed to safeguard our national interests, let us also safeguard human interests. And the elimination of war and arms is clearly in the interest of both. No treaty, however much it may be to the advantage of all, however tightly it may be worded, can provide absolute security against the risks of deception and evasion. But it can--if it is sufficiently effective in its enforcement and if it is sufficiently in the interests of its signers--offer far more security and far fewer risks than an unabated, uncontrolled, unpredictable arms race.

The United States, as the world knows, will never start a war. We do not want a war. We do not now expect a war. This generation of Americans has already had enough--more than enough--of war and hate and oppression. We shall be prepared if others wish it. We shall be alert to try to stop it. But we shall also do our part to build a world of peace where the weak are safe and the strong are just. We are not helpless before that task or hopeless of its success. Confident and unafraid, we labor on--not toward a strategy of annihilation but toward a strategy of peace.

Note: The President spoke at the John M. Reeves Athletic Field on the campus of American University after being awarded an honorary degree of doctor of laws. In his opening words he referred to Hurst R. Anderson, president of the university, and Robert C. Byrd, U.S. Senator from West Virginia.

John F. Kennedy, Commencement Address at American University in Washington Online by Gerhard Peters and John T. Woolley, The American Presidency Project https://www.presidency.ucsb.edu/node/236652

TELEVISED ADDRESS TO THE NATION ON CIVIL RIGHTS

JOHN F. KENNEDY

35th President of the United States: 1961 - 1963

Radio and Television Report to the American People on Civil Rights

June 11, 1963

Good evening, my fellow citizens:

This afternoon, following a series of threats and defiant statements, the presence of Alabama National Guardsmen was required on the University of Alabama to carry out the final and unequivocal order of the United States District Court of the Northern District of Alabama. That order called for the admission of two clearly qualified young Alabama residents who happened to have been born Negro.

That they were admitted peacefully on the campus is due in good measure to the conduct of the students of the University of Alabama, who met their responsibilities in a constructive way.

I hope that every American, regardless of where he lives, will stop and examine his conscience about this and other related incidents. This Nation was founded by men of many nations and backgrounds. It was founded on the principle that all men are created equal, and that the rights of every man are diminished when the rights of one man are threatened.

Today we are committed to a worldwide struggle to promote and protect the rights of all who wish to be free. And when Americans are sent to Viet-Nam or West Berlin, we do not ask for whites only. It ought to be possible, therefore, for American students of any color to attend any public institution they select without having to be backed up by troops.

It ought to be possible for American consumers of any color to receive equal service in places of public accommodation, such as hotels and restaurants and theaters and retail stores, without being forced to resort to demonstrations in the street, and it ought to be possible for American citizens of any color to register and to vote in a free election without interference or fear of reprisal.

It ought to be possible, in short, for every American to enjoy the privileges of being American without regard to his race or his color. In short, every American ought to have the right to be treated as he would wish to be treated, as one would wish his children to be treated. But this is not the case.

The Negro baby born in America today, regardless of the section of the Nation in which he is born, has about one-half as much chance of completing a high school as a white baby born in the same place on the same day, one-third as much chance of completing college, one-third as much chance of becoming a professional man, twice as much chance of becoming unemployed, about one-seventh as much chance of earning $10,000 a year, a life expectancy which is 7 years shorter, and the prospects of earning only half as much.

This is not a sectional issue. Difficulties over segregation and discrimination exist in every city, in every State of the Union, producing in many cities a rising tide of discontent that threatens the public safety. Nor is this a partisan issue. In a time of domestic crisis men of good will and generosity should be able to unite regardless of party or politics. This is not even a legal or legislative issue alone. It is better to settle these matters in the courts than on the streets, and new laws are needed at every level, but law alone cannot make men see right.

We are confronted primarily with a moral issue. It is as old as the scriptures and is as clear as the American Constitution.

The heart of the question is whether all Americans are to be afforded equal rights and equal opportunities, whether we are going to treat our fellow Americans as we want to be treated. If an American, because his skin is dark, cannot eat lunch in a restaurant open to the public, if he cannot send his children to the best public school available, if he cannot vote for the public officials who represent him, if, in short, he cannot enjoy the full and free life which all of us want, then who among us would be content to have the color of his skin changed and stand in his place? Who among us would then be content with the counsels of patience and delay?

One hundred years of delay have passed since President Lincoln freed the slaves, yet their heirs, their grandsons, are not fully free. They are not yet freed from the bonds of injustice. They are not yet freed from social and economic oppression. And this Nation, for all its hopes and all its boasts, will not be fully free until all its citizens are free.

We preach freedom around the world, and we mean it, and we cherish our freedom here at home, but are we to say to the world, and much more importantly, to each other that this is a land of the free except for the Negroes; that we have no second-class citizens except Negroes; that we have no class or cast *[See APP Note]* system, no ghettoes, no master race except with respect to Negroes?

Now the time has come for this Nation to fulfill its promise. The events in Birmingham and elsewhere have so increased the cries for equality that no city or State or legislative body can prudently choose to ignore them.

The fires of frustration and discord are burning in every city, North and South, where legal remedies are not at hand. Redress is sought in the streets, in demonstrations, parades, and protests which create tensions and threaten violence and threaten lives.

We face, therefore, a moral crisis as a country and as a people. It cannot be met by repressive police action. It cannot be left to increased demonstrations in the streets. It cannot be quieted by token moves or talk. It is a time to act in the Congress, in your State and local legislative body and, above all, in all of our daily lives.

It is not enough to pin the blame on others, to say this is a problem of one section of the country or another, or deplore the fact that we face. A great change is at hand, and our task, our obligation, is to make that revolution, that change, peaceful and constructive for all.

Those who do nothing are inviting shame as well as violence. Those who act boldly are recognizing right as well as reality.

Next week I shall ask the Congress of the United States to act, to make a commitment it has not fully made in this century to the proposition that race has no place in American life or law. The Federal judiciary has upheld that proposition in a series of forthright cases. The executive branch has adopted that proposition in the conduct of its affairs, including the employment of Federal personnel, the use of Federal facilities, and the sale of federally financed housing.

But there are other necessary measures which only the Congress can provide, and they must be provided at this session. The old code of equity law under which we live commands for every wrong a remedy, but in too many communities, in too many parts of the country, wrongs are inflicted on Negro citizens and there are no remedies at law. Unless the Congress acts, their only remedy is in the street.

I am, therefore, asking the Congress to enact legislation giving all Americans the right to be served in facilities which are open to the public--hotels, restaurants, theaters, retail stores, and similar establishments.

This seems to me to be an elementary right. Its denial is an arbitrary indignity that no American in 1963 should have to endure, but many do.

I have recently met with scores of business leaders urging them to take voluntary action to end this discrimination and I have been encouraged by their response, and in the last 2 weeks over 75 cities have seen progress made in desegregating these kinds of facilities. But many are unwilling to act alone, and for this reason, nationwide legislation is needed if we are to move this problem from the streets to the courts.

I am also asking Congress to authorize the Federal Government to participate more fully in lawsuits designed to end segregation in public education. We have succeeded in persuading many districts to de-segregate voluntarily. Dozens have admitted Negroes without violence. Today a Negro is attending a State-supported institution in every one of our 50 States, but the pace is very slow.

Too many Negro children entering segregated grade schools at the time of the Supreme Court's decision 9 years ago will enter segregated high schools this fall, having suffered a loss which can never be restored. The lack of an adequate education denies the Negro a chance to get a decent job.

The orderly implementation of the Supreme Court decision, therefore, cannot be left solely to those who may not have the economic resources to carry the legal action or who may be subject to harassment.

Other features will be also requested, including greater protection for the right to vote. But legislation, I repeat, cannot solve this problem alone. It must be solved in the homes of every American in every community across our country.

In this respect, I want to pay tribute to those citizens North and South who have been working in their communities to make life better for all. They are acting not out of a sense of legal duty but out of a sense of human decency.

Like our soldiers and sailors in all parts of the world they are meeting freedom's challenge on the firing line, and I salute them for their honor and their courage.

My fellow Americans, this is a problem which faces us all--in every city of the North as well as the South. Today there are Negroes unemployed, two or three times as many compared to whites, inadequate in education, moving into the large cities, unable to find work, young people particularly out of work without hope, denied equal rights, denied the opportunity to eat at a restaurant or lunch counter or go to a movie theater, denied the right to a decent education, denied almost today the right to attend a State university even though qualified. It seems to me that these are matters which concern us all, not merely Presidents or Congressmen or Governors, but every citizen of the United States.

This is one country. It has become one country because all of us and all the people who came here had an equal chance to develop their talents.

We cannot say to 10 percent of the population that you can't have that right; that your children can't have the chance to develop whatever talents they have; that the only way that they are going to get their rights is to go into the streets and demonstrate. I think we owe them and we owe ourselves a better country than that.

Therefore, I am asking for your help in making it easier for us to move ahead and to provide the kind of equality of treatment which we would want ourselves; to give a chance for every child to be educated to the limit of his talents.

As I have said before, not every child has an equal talent or an equal ability or an equal motivation, but they should have the equal right to develop their talent and their ability and their motivation, to make something of themselves.

We have a right to expect that the Negro community will be responsible, will uphold the law, but they have a right to expect that the law will be fair, that the Constitution will be color blind, as Justice Harlan said at the turn of the century.

This is what we are talking about and this is a matter which concerns this country and what it stands for, and in meeting it I ask the support of all our citizens.

Thank you very much.

REMARKS AT THE RUDOLPH WILDE PLATZ, BERLIN

JOHN F. KENNEDY

35th President of the United States: 1961 - 1963

Remarks in the Rudolph Wilde Platz, Berlin

June 26, 1963

I am proud to come to this city as the guest of your distinguished Mayor, who has symbolized throughout the world the fighting spirit of West Berlin. And I am proud to visit the Federal Republic with your distinguished Chancellor who for so many years has committed Germany to democracy and freedom and progress, and to come here in the company of my fellow American, General Clay, who has been in this city during its great moments of crisis and will come again if ever needed.

Two thousand years ago the proudest boast was "civis Romanus sum." Today, in the world of freedom, the proudest boast is "Ich bin ein Berliner."

I appreciate my interpreter translating my German!

There are many people in the world who really don't understand, or say they don't, what is the great issue between the free world and the Communist world. Let them come to Berlin. There are some who say that communism is the wave of the future. Let them come to Berlin. And there are some who say in Europe and elsewhere we can work with the Communists. Let them come to Berlin. And there are even a few who say that it is true that communism is an evil system, but it permits us to make economic progress. Lass' sie nach Berlin kommen. Let them come to Berlin.

Freedom has many difficulties and democracy is not perfect, but we have never had to put a wall up to keep our people in, to prevent them from leaving us. I want to say, on behalf of my countrymen, who live many miles away on the other side of the Atlantic, who are far distant from you, that they take the greatest pride that they have been able to share with you, even from a distance, the story of the last 18 years. I know of no town, no city, that has been besieged for 18 years that still lives with the vitality and the force, and the hope and the determination of the city of West Berlin. While the wall is the most obvious and vivid demonstration of the failures of the Communist system, for all the world to see, we take no satisfaction in it, for it is, as your Mayor has said, an offense not only against history but an offense against humanity, separating families, dividing husbands and wives and brothers and sisters, and dividing a people who wish to be joined together.

What is true of this city is true of Germany-real, lasting peace in Europe can never be assured as long as one German out of four is denied the elementary right of free men, and that is to make a free choice. In 18 years of peace and good faith, this generation of Germans has earned the right to be free, including the right to unite their families and their nation in lasting peace, with good will to all people. You live in a defended island of freedom, but your life is part of the main. So let me ask you, as I close, to lift your eyes beyond the dangers of today, to the hopes of tomorrow, beyond the freedom merely of this city of Berlin, or your country of Germany, to the advance of freedom everywhere, beyond the wall to the day of peace with justice, beyond yourselves and ourselves to all mankind.

Freedom is indivisible, and when one man is enslaved, all are not free. When all are free, then we can look forward to that day when this city will be joined as one and this country and this great Continent of Europe in a peaceful and hopeful globe. When that day finally comes, as it will, the people of West Berlin can take sober satisfaction in the fact that they were in the front lines for almost two decades.

All free men, wherever they may live, are citizens of Berlin, and, therefore, as a free man, I take pride in the words "Ich bin ein Berliner."

ADDRESS BEFORE THE IRISH PARLIAMENT

JOHN F. KENNEDY

35th President of the United States: 1961 - 1963

Address Before the Irish Parliament in Dublin.

June 28, 1963

Mr. Speaker, Prime Minister, Members of the Parliament:

I am grateful for your welcome and for that of your countrymen.

The 13th day of December, 1862, will be a day long remembered in American history. At Fredericksburg, Va., thousands of men fought and died on one of the bloodiest battlefields of the American Civil War. One of the most brilliant stories of that day was written by a band of 1200 men who went into battle wearing a green sprig in their hats. They bore a proud heritage and a special courage, given to those who had long fought for the cause of freedom. I am referring, of course, to the Irish Brigade. General Robert E. Lee, the great military leader of the Southern Confederate forces, said of this group of men after the battle, "The gallant stand which this bold brigade made on the heights of Fredericksburg is well known. Never were men so brave. They ennobled their race by their splendid gallantry on that desperate occasion. Their brilliant though hopeless assaults on our lines excited the hearty applause of our officers and soldiers."

Of the 1200 men who took part in that assault, 280 survived the battle. The Irish Brigade was led into battle on that occasion by Brig. Gen. Thomas F. Meagher, who had participated in the unsuccessful Irish uprising of 1848, was captured by the British and sent in a prison ship to Australia, from whence he finally came to America. In the fall of 1862, after serving with distinction and gallantry in some of the toughest fighting of this most bloody struggle, the Irish Brigade was presented with a new set of flags. In the city ceremony, the city chamberlain gave them the motto, "The Union, our Country, and Ireland Forever." Their old ones having been torn to shreds by bullets in previous battles, Capt. Richard McGee took possession of these flags on December 2d in New York City and arrived with them at the Battle of Fredericksbnrg and carried them in the battle. Today, in recognition of what these gallant Irishmen and what millions of other Irish have done for my country, and through the generosity of the "Fighting 69th," I would like to present one of these flags to the people of Ireland.

As you can see, gentlemen, the battle honors of the Brigade include Fredericksburg,' Chancellorsville, Yorktown, Fair Oaks, Gaines Mill, Allen's Farm, Savage's Station, White Oak Bridge, Glendale, Malvern Hill, Antietam, Gettysburg, and Bristow Station.

I am deeply honored to be your guest in the Free Parliament of a free Ireland. If this nation had achieved its present political and economic stature a century or so ago, my great grandfather might never have left New Ross, and I might, if fortunate, be sitting down there with you. Of course, if your own President had never left Brooklyn, he might be standing up here instead of me!

This elegant building, as you know, was once the property of the Fitzgerald family, but I have not come here to claim it. Of all the new relations I have discovered on' this trip, I regret to say that no one has yet found any link between me and a great Irish patriot, Lord Edward Fitzgerald. Lord Edward, however, did not like to stay here in his family home because, as he wrote his mother, "Leinster House does not inspire the brightest ideas." That was a long time ago, however. It has also been said by some that a few of the features of this stately mansion served to inspire similar features in the White House in Washington. Whether this is true or not, I know that the White House was designed by James Hoban, a noted Irish-American architect and I have no doubt that he believed by incorporating several features of the Dublin style he would make it more homelike for any President of Irish descent. It was a long wait, but I appreciate his efforts.

There is also an unconfirmed rumor that Hoban was never fully paid for his work on the White House. If this proves to be true, I will speak to our Secretary of the Treasury about it, although I hear this body is not particularly interested in the subject of revenues.

I am proud to be the first American President to visit Ireland during his term of office, proud to be addressing this distinguished assembly, and proud of the welcome you have given me. My presence and your welcome, however, only symbolize the many and the enduring links which have bound the Irish and the Americans since the earliest days.

Benjamin Franklin--the envoy of the American Revolution who was also born in Boston--was received by the Irish Parliament in 1772. It was neither independent nor free from discrimination at the time, but Franklin reported its members "disposed to be friends of America." "By joining our interest with theirs," he said, "a more equitable treatment ... might be obtained for both nations."

Our interests have been joined ever since. Franklin sent leaflets to Irish freedom fighters. O'Connell was influenced by Washington, and Emmet influenced Lincoln. Irish volunteers played so predominant a role in the American army that Lord Mountjoy lamented in the British Parliament that "we have lost America through the Irish." John Barry, whose statue we honored yesterday and whose sword is in my office, was only one who fought for liberty in America to set an example for liberty in Ireland. Yesterday was the 117th anniversary of the birth of Charles Stewart Parnell--whose grandfather fought under Barry and whose mother was born in America-and who, at the age of 34, was invited to address the American Congress on the cause of Irish freedom. "I have seen since I have been in this country," he said, "so many tokens of the good wishes of the American people toward Ireland .... " And today, 83 years later, I can say to you that I have seen in this country so many tokens of good wishes of the Irish people towards America.

And so it is that our two nations, divided by distance, have been united by history. No people ever believed more deeply in the cause of Irish freedom than the people of the United States. And no country contributed more to building my own than your sons and daughters. They came to our shores in a mixture of hope and agony, and I would not underrate the difficulties of their course once they arrived in the United States. They left behind hearts, fields, and a nation yearning to be free. It is no wonder that James Joyce described the Atlantic as a bowl of bitter tears. And an earlier poet wrote, "They are going, going, going, and we cannot bid them stay."

But today this is no longer the country of hunger and famine that those emigrants left behind. It is not rich, and its progress is not yet complete; but it is, according to statistics, one of the best fed countries in the world. Nor is it any longer a country of persecution, political or religious. It is a free country, and that is why any American feels at home.

There are those who regard this history of past strife and exile as better forgotten. But, to use the phrase of Yeats, let us not casually reduce "that great past to a trouble of fools." For we need not feel the bitterness of the past to discover its meaning for the present and the future. And it is the present and the future of Ireland that today holds so much promise to my nation as well as to yours, and, indeed, to all mankind.

For the Ireland of 1963, one of the youngest of nations and the oldest of civilizations, has discovered that the achievement of nationhood is not an end but a beginning. In the years since independence, you have undergone a new and peaceful revolution, an economic and industrial revolution, transforming the face of this land while still holding to the old spiritual and cultural values. You have modernized your economy, harnessed your rivers, diversified your industry, liberalized your trade, electrified your farms, accelerated your rate of growth, and improved the living standards of your people.

The other nations of the world--in whom Ireland has long invested her people and her children--are now investing their capital as well as their vacations here in Ireland. This revolution is not yet over, nor will it be, I am sure, until a fully modern Irish economy fully shares in world prosperity.

But prosperity is not enough. Eighty-three years ago, Henry Grattan, demanding the more independent Irish Parliament that would always bear his name, denounced those who were satisfied merely by new grants of economic opportunity. "A country," he said, "enlightened as Ireland, chartered as Ireland, armed as Ireland and injured as Ireland will be satisfied with nothing less than liberty." And today, I am certain, free Ireland--a full-fledged member of the World Community, where some are not yet free, and where some counsel an acceptance of tyranny free Ireland will not be satisfied with anything less than liberty.

I am glad, therefore, that Ireland is moving in the mainstream of current world events. For I sincerely believe that your future is as promising as your past is proud, and that your destiny lies not as a peaceful island in a sea of troubles, but as a maker and shaper of world peace.

For self-determination can no longer mean isolation; and the achievement of national independence today means withdrawal from the old status only to return to the world scene with a new one. New nations can build with their former governing powers the same kind of fruitful relationship that Ireland has established with Great Britain--a relationship rounded on equality and mutual interests. And no nation, large or small, can be indifferent to the fate of others, near or far. Modern economics, weaponry and communications have made us realize more than ever that we are one human family and this one planet is our home.

"The world is large," wrote John Boyle O'Reilly.

"The world is large when its weary leagues two loving hearts divide,
"But the world is small when your enemy is loose on the other side."

The world is even smaller today, though the enemy of John Boyle O'Reilly is no longer a hostile power. Indeed, across the gulfs and barriers that now divide us, we must remember that there are no permanent enemies. Hostility today is a fact, but it is not a ruling law. The supreme reality of our time is our indivisibility as children of God and our common vulnerability on this planet.

Some may say that all this means little to Ireland. In an age when "history moves with the tramp of earthquake feet"--in an age when a handful of men and nations have the power literally to devastate mankind--in an age when the needs of the developing nations are so staggering that even the richest lands often groan with the burden of assistance--in such an age, it may be asked, how can a nation as small as Ireland play much of a role on the world stage?

I would remind those who ask that question, including those in other small countries, of the words of one of the great orators of the English language:

"All the world owes much to the little five feet high nations. The greatest art of the world was the work of little nations. The most enduring literature of the world came from little nations. The heroic deeds that thrill humanity through generations were the deeds of little nations fighting for their freedom. And oh, yes, the salvation of mankind came through a little nation."

Ireland has already set an example and a standard for other small nations to follow.

This has never been a rich or powerful country, and yet, since earliest times, its influence on the world has been rich and powerful. No larger nation did more to keep Christianity and Western culture alive in their darkest centuries. No larger nation did more to spark the cause of independence in America, indeed, around the world. And no larger nation has ever provided the world with more literary and artistic genius.

This is an extraordinary country. George Bernard Shaw, speaking as an Irishman, summed up an approach to life: Other people, he said, "see things and... say: 'Why?' ... But I dream things that never were-and I say: 'Why not?'"

It is that quality of the Irish--that remarkable combination of hope, confidence, and imagination--that is needed more than ever today. The problems of the world cannot possibly be solved by skeptics or cynics, whose horizons are limited by the obvious realities. We need men who can dream of things that never were, and ask why not. It matters not how small a nation is that seeks world peace and freedom, for, to paraphrase a citizen of my country, "the humblest nation of all the world, when clad in the armor of a righteous cause, is stronger than all the hosts of Error."

Ireland is clad in the cause of national and human liberty with peace. To the extent that the peace is disturbed by conflict between the former colonial powers and the new and developing nations, Ireland's role is unique. For every new nation knows that Ireland was the first of the small nations in the 20th century to win its struggle for independence, and that the Irish have traditionally sent their doctors and technicians and soldiers and priests to help other lands to keep their liberty alive.

At the same time, Ireland is part of Europe, associated with the Council of Europe, progressing in the context of Europe, and a prospective member of an expanded European Common Market. Thus Ireland has excellent relations with both the new and the old, the confidence of both sides and an opportunity to act where the actions of greater powers might be looked upon with suspicion.

The central issue of freedom, however, is between those who believe in self-determination and those in the East who would impose on others the harsh and oppressive Communist system; and here your nation wisely rejects the role of a go-between or a mediator. Ireland pursues an independent course in foreign policy, but it is not neutral between liberty and tyranny and never will be.

For knowing the meaning of foreign domination, Ireland is the example and inspiration to those enduring endless years of oppression. It was fitting and appropriate that this nation played a leading role in censuring the suppression of the Hungarian revolution, for how many times was Ireland's quest for freedom suppressed only to have that quest renewed, only to have that quest renewed by the succeeding generation? Those who suffer beyond that wall I saw on Wednesday in Berlin must not despair of their future. Let them remember the constancy, the faith, the endurance, and the final success of the Irish. And let them remember, as I heard sung by your sons and daughters yesterday in Wexford, the words, "the boys of Wexford, who fought with heart and hand, to burst in twain the galling chain and free our native land."

The major forum for your nation's greater role in world affairs is that of protector of the weak and voice of the small, the United Nations. From Cork to the Congo, from Galway to the Gaza Strip, from this legislative assembly to the United Nations, Ireland is sending its most talented men to do the world's most important work the work of peace.

In a sense, this export of talent is in keeping with an historic Irish role--but you no longer go as exiles and emigrants but for the service of your country and, indeed, of all men. Like the Irish missionaries of medieval days, like the "wild geese" after the Battle of the Boyne, you are not content to sit by your fireside while others are in need of your help. Nor are you content with the recollections of the past when you face the responsibilities of the present.

Twenty-six sons of Ireland have died in the Congo; many others have been wounded. I pay tribute to them and to all of you for your commitment and dedication to world order. And their sacrifice reminds us all that we must not falter now.

The United Nations must be fully and fairly financed. Its peace-keeping machinery must be strengthened. Its institutions must be developed until some day, and perhaps some distant day, a world of law is achieved.

Ireland's influence in the United Nations is far greater than your relative size. You have not hesitated to take the lead on such sensitive issues as the Kashmir dispute. And you sponsored that most vital resolution, adopted by the General Assembly, which opposed the spread of nuclear arms to any nation not now possessing them, urging an international agreement with inspection and controls. And I pledge to you that the United States of America will do all in its power to achieve such an agreement and fulfill your resolution.

I speak of these matters today--not because Ireland is unaware of its role--but I think it important that you know that we know what you have done. And I speak to remind the other small nations that they, too, can and must help build a world peace. They, too, as we all are, are dependent on the United Nations for security, for an equal chance to be heard, for progress towards a world made safe for diversity.

The peace-keeping machinery of the United Nations cannot work without the help of the smaller nations, nations whose forces threaten no one and whose forces can thus help create a world in which no nation is threatened. Great powers have their responsibilities and their burdens, but the smaller nations of the world must fulfill their obligations as well.

A great Irish poet once wrote: "I believe profoundly ... in the future of Ireland ... that this is an isle of destiny, that that destiny will be glorious... and that when our hour is come, we will have something to give to the world."

My friends: Ireland's hour has come. You have something to give to the world--and that is a future of peace with freedom.

Thank you.

Note: The President spoke at 4 p.m. in Leinster House before a joint session of the Seahad and the Dail. In his opening words he referred to Patrick Hogan, Speaker of the Dail, and Prime Minister Sean Lemass. He later referred to Eamon de Valera, President of Ireland, who lived for a time in Brooklyn, N.Y.

Additional details concerning the history of the flag of the Irish Brigade are set forth in a White House release issued the same day.

John F. Kennedy, Address Before the Irish Parliament in Dublin. Online by Gerhard Peters and John

TELEVISED ADDRESS ON NUCLEAR TEST BAN TREATY

JOHN F. KENNEDY

35th President of the United States: 1961 - 1963

Radio and Television Address to the American People on the Nuclear Test Ban Treaty

July 26, 1963

[*Delivered from the President's office at 7 p.m.*]

Good evening, my fellow citizens:

I speak to you tonight in a spirit of hope. Eighteen years ago the advent of nuclear weapons changed the course of the world as well as the war. Since that time, all mankind has been struggling to escape from the darkening prospect of mass destruction on earth. In an age when both sides have come to possess enough nuclear power to destroy the human race several times over, the world of communism and the world of free choice have been caught up in a vicious circle of conflicting ideology and interest. Each increase of tension has produced an increase of arms; each increase of arms has produced an increase of tension.

In these years, the United States and the Soviet Union have frequently communicated suspicion and warnings to each other, but very rarely hope. Our representatives have met at the summit and at the brink; they have met in Washington and in Moscow; in Geneva and at the United Nations. But too often these meetings have produced only darkness, discord, or disillusion.

Yesterday a shaft of light cut into the darkness. Negotiations were concluded in Moscow on a treaty to ban all nuclear tests in the atmosphere, in outer space, and under water. For the first time, an agreement has been reached on bringing the forces of nuclear destruction under international control--a goal first sought in 1946 when Bernard Baruch presented a comprehensive control plan to the United Nations.

That plan, and many subsequent disarmament plans, large and small, have all been blocked by those opposed to international inspection. A ban on nuclear tests, however, requires on-the-spot inspection only for underground tests. This Nation now possesses a variety of techniques to detect the nuclear tests of other nations which are conducted in the air or under water, for such tests produce unmistakable signs which our modern instruments can pick up.

The treaty initialed yesterday, therefore, is a limited treaty which ,permits continued underground testing and prohibits only those tests that we ourselves can police. It requires no control posts, no onsite inspection, no international body.

We should also understand that it has other limits as well. Any nation which signs the treaty will have an opportunity to withdraw if it finds that extraordinary events related to the subject matter of the treaty have jeopardized its supreme interests; and no nation's right of self-defense will in any way be impaired. Nor does this treaty mean an end to the threat of nuclear war. It will not reduce nuclear stockpiles; it will not halt the production of nuclear weapons; it will not restrict their use in time of war.

Nevertheless, this limited treaty will radically reduce the nuclear testing which would otherwise be conducted on both sides; it will prohibit the United States, the United Kingdom, the Soviet Union, and all others who sign it, from engaging in the atmospheric tests which have so alarmed mankind; and it offers to all the world a welcome sign of hope.

For this is not a unilateral moratorium, but a specific and solemn legal obligation. While it will not prevent this Nation from testing underground, or from being ready to conduct atmospheric tests if the acts of others so require, it gives us a concrete opportunity to extend its coverage to other nations and later to other forms of nuclear tests.

This treaty is in part the product of Western patience and vigilance. We have made clear--most recently in Berlin and Cuba-our deep resolve to protect our security and our freedom against any form of aggression. We have also made clear our steadfast determination to limit the arms race. In three administrations, our soldiers and diplomats have worked together to this end, always supported by Great Britain. Prime Minister Macmillan joined with President Eisenhower in proposing a limited test ban in 1959, and again with me in 1961 and 1962.

But the achievement of this goal is not a victory for one side--it is a victory for mankind. It reflects no concessions either to or by the Soviet Union. It reflects simply our common recognition of the dangers in further testing.

This treaty is not the millennium. It will not resolve all conflicts, or cause the Communists to forego their ambitions, or eliminate the dangers of war. It will not reduce our need for arms or allies or programs of assistance to others. But it is an important first step--a step towards peace--a step towards reason--a step away from war.

Here is what this step can mean to you and to your children and your neighbors:

First, this treaty can be a step towards reduced world tension and broader areas of agreement. The Moscow talks have reached no agreement on any other subject, nor is this treaty conditioned on any other matter. Under Secretary Harriman made it clear that any nonaggression arrangements across the division in Europe would require full consultation with our allies and full attention to their interests. He also made clear our strong preference for a more comprehensive treaty banning all tests everywhere, and our ultimate hope for general and complete disarmament. The Soviet

Government, however, is still unwilling to accept the inspection such goals require.

No one can predict with certainty, therefore, what further agreements, if any, can be built on the foundations of this one. They could include controls on preparations for surprise attack, or on numbers and type of armaments. There could be further limitations on the spread of nuclear weapons. The important point is that efforts to seek new agreements will go forward.

But the difficulty of predicting the next step is no reason to be reluctant about this step. Nuclear test ban negotiations have long been a symbol of East-West disagreement. If this treaty can also be a symbol-if it can symbolize the end of one era and the beginning of another--if both sides can by this treaty gain confidence and experience in peaceful collaboration--then this short and simple treaty may well become an historic mark in man's age-old pursuit of peace.

Western policies have long been designed to persuade the Soviet Union to renounce aggression, direct or indirect, so that their people and all people may live and let live in peace. The unlimited testing of new weapons of war cannot lead towards that end--but this treaty, if it can be followed by further progress, can clearly move in that direction.

I do not say that a world without aggression or threats of war would be an easy world. It will bring new problems, new challenges from the Communists, new dangers of relaxing our vigilance or of mistaking their intent.

But those dangers pale in comparison to those of the spiraling arms race and a collision course towards war. Since the beginning of history, war has been mankind's constant companion. It has been the rule, not the exception. Even a nation as young and as peace-loving as our own has fought through eight wars. And three times in the last two years and a half I have been required to report to you as President that this Nation and the Soviet Union stood on the verge of direct military confrontation--in Laos, in Berlin, and in Cuba.

A war today or tomorrow, if it led to nuclear war, would not be like any war in history. A full-scale nuclear exchange, lasting less than 60 minutes, with the weapons now in existence, could wipe out more than 300 million Americans, Europeans, and Russians, as well as untold numbers elsewhere. And the survivors, as Chairman Khrushchev warned the Communist Chinese, "the survivors would envy the dead." For they would inherit a world so devastated by explosions and poison and fire that today we cannot even conceive of its horrors. So let us try to turn the world away from war. Let us make the most of this opportunity, and every opportunity, to reduce tension, to slow down the perilous nuclear arms race, and to check the world's slide toward final annihilation.

Second, this treaty can be a step towards freeing the world from the fears and dangers of radioactive fallout. Our own atmospheric tests last year were conducted under conditions which restricted such fallout to an absolute minimum. But over the years the number and the yield of weapons tested have rapidly increased and so have the radioactive hazards from such testing. Continued unrestricted testing by the nuclear powers, joined in time by other nations which may be less adept in limiting pollution, will increasingly contaminate the air that all of us must breathe. Even then, the number of children and grandchildren with cancer in their bones, with leukemia in their blood, or with poison in their lungs might seem statistically small to some, in comparison with natural health hazards. But this is not a natural health hazard--and it is not a statistical issue. The loss of even one human life, or the malformation of even one baby--who may be born long after we are gone--should be of concern to us all. Our children and grandchildren are not merely statistics toward which we can be indifferent.

Nor does this affect the nuclear powers alone. These tests befoul the air of all men and all nations, the committed and the uncommitted alike, without their knowledge and without their consent. That is why the continuation of atmospheric testing causes so many countries to regard all nuclear powers as equally evil; and we can hope that its prevention will enable those countries to see the world more clearly, while enabling all the world to breathe more easily.

Third, this treaty can be a step toward preventing the spread of nuclear weapons to nations not now possessing them. During the next several years, in addition to the four current nuclear powers, a small but significant number of nations will have the intellectual, physical, and financial resources to produce both nuclear weapons and the means of delivering them. In time, it is estimated, many other nations will have either this capacity or other ways of obtaining nuclear warheads, even as missiles can be commercially purchased today.

I ask you to stop and think for a moment what it would mean to have nuclear weapons in so many hands, in the hands of countries large and small, stable and unstable, responsible and irresponsible, scattered throughout the world. There would be no rest for anyone then, no stability, no real security, and no chance of effective disarmament. There would only be the increased chance of accidental war, and an increased necessity for the great powers to involve themselves in what otherwise would be local conflicts.

If only one thermonuclear bomb were to be dropped on any American, Russian, or any other city, whether it was launched by accident or design, by a madman or by an enemy, by a large nation or by a small, from any corner of the world, that one bomb could release more destructive power on the inhabitants of that one helpless city than all the bombs dropped in the Second World War.

Neither the United States nor the Soviet Union nor the United Kingdom nor France can look forward to that day with equanimity. We have a great obligation, all four nuclear powers have a great obligation, to use whatever time remains to prevent the spread of nuclear weapons, to persuade other countries not to test, transfer, acquire, possess, or produce such weapons.

This treaty can be the opening wedge in that campaign. It provides that none of the parties will assist other nations to test in the forbidden environments. It opens the door for further agreements on the control of nuclear weapons, and it is open for all nations to sign, for it is in the interest of all nations, and already we have heard from a number of countries who wish to join with us promptly.

Fourth and finally, this treaty can limit the nuclear arms race in ways which, on balance, will strengthen our Nation's security far more than the continuation of unrestricted testing. For in today's world, a nation's security does not always increase as its arms increase, when its adversary is doing the same, and unlimited competition in the testing and development of new types of destructive nuclear weapons will not make the world safer for either side. Under this limited treaty, on the other hand, the testing of other nations could never be sufficient to offset the ability of our strategic forces to deter or survive a nuclear attack and to penetrate and destroy an aggressor's homeland.

We have, and under this treaty we will continue to have, the nuclear strength that we need. It is true that the Soviets have tested nuclear weapons of a yield higher than that which we thought to be necessary, but the hundred megaton bomb of which they spoke 2 years ago does not and will not change the balance of strategic power. The United States has chosen, deliberately, to concentrate on more mobile and more efficient weapons, with lower but entirely sufficient yield, and our security is, therefore, not impaired by the treaty I am discussing.

It is also true, as Mr. Khrushchev would agree, that nations cannot afford in these matters to rely simply on the good faith of their adversaries. We have not, therefore, overlooked the risk of secret violations. There is at present a possibility that deep in outer space, that hundreds and thousands and millions of miles away from the earth illegal tests might go undetected. But we already have the capability to construct a system of observation that would make such tests almost impossible to conceal, and we can decide at any time whether such a system is needed in the light of the limited risk to us and the limited reward to others of violations attempted at that range. For any tests which might be conducted so far out in space, which cannot be conducted more easily and efficiently and legally underground, would necessarily be of such a magnitude that they would be extremely difficult to conceal. We can also employ new devices to check on the testing of smaller weapons in the lower atmosphere. Any violations, moreover, involves, along with the risk of detection, the end of the treaty and the worldwide consequences for the violator.

Secret violations are possible and secret preparations for a sudden withdrawal are possible, and thus our own vigilance and strength must be maintained, as we remain ready to withdraw and to resume all forms of testing, if we must. But it would be a mistake to assume that this treaty will be quickly broken. The gains of illegal testing are obviously slight compared to their cost, and the hazard of discovery, and the nations which have initialed and will sign this treaty prefer it, in my judgment, to unrestricted testing as a matter of their own self-interests for these nations, too, and all nations, have a stake in limiting the arms race, in holding the spread of nuclear weapons, and in breathing air that is not radioactive. While it may be theoretically possible to demonstrate the risks inherent in any treaty, and such risks in this treaty are small, the far greater risks to our security are the risks of unrestricted testing, the risk of a nuclear arms race, the risk of new nuclear powers, nuclear pollution, and nuclear war.

This limited test ban, in our most careful judgment, is safer by far for the United States than an unlimited nuclear arms race. For all these reasons, I am hopeful that this Nation will promptly approve the limited test ban treaty. There will, of course, be debate in the country and in the Senate. The Constitution wisely requires the advice and consent of the Senate to all treaties, and that consultation has already begun. All this is as it should be. A document which may mark an historic and constructive opportunity for the world deserves an historic and constructive debate.

It is my hope that all of you will take part in that debate, for this treaty is for all of us. It is particularly for our children and our grandchildren, and they have no lobby here in Washington. This debate will involve military, scientific, and political experts, but it must be not left to them alone. The right and the responsibility are yours.

If we are to open new doorways to peace, if we are to seize this rare opportunity for progress, if we are to be as bold and farsighted in our control of weapons as we have been in their invention, then let us now show all the world on this side of the wall and the other that a strong America also stands for peace. There is no cause for complacency.

We have learned in times past that the spirit of one moment or place can be gone in the next. We have been disappointed more than once, and we have no illusions now that there are shortcuts on the road to peace. At many points around the globe the Communists are continuing their efforts to exploit weakness and poverty. Their concentration of nuclear and conventional arms must still be deterred.

The familiar contest between choice and coercion, the familiar places of danger and conflict, are all still there, in Cuba, in Southeast Asia, in Berlin, and all around the globe, still requiring all the strength and the vigilance that we can muster. Nothing could more greatly damage our cause than if we and our allies were to believe that peace has already been achieved, and that our strength and unity were no longer required.

But now, for the first time in many years, the path of peace may be open. No one can be certain what the future will bring. No one can say whether the time has come for an easing of the struggle. But history and our own conscience will judge us harsher if we do not now make every effort to test our hopes by action, and this is the place to begin. According to the ancient Chinese proverb, "A journey of a thousand miles must begin with a single step."

My fellow Americans, let us take that first step. Let us, if we can, step back from the shadows of war and seek out the way of peace. And if that journey is a thousand miles, or even more, let history record that we, in this land, at this time, took the first step.

Thank you and good night.

John F. Kennedy, Radio and Television Address to the American People on the Nuclear Test Ban Treaty Online by Gerhard Peters and John T. Woolley, The American Presidency Project https://www.presidency.ucsb.edu/node/237272

REMARKS AT AMHERST COLLEGE ON THE ARTS

JOHN F. KENNEDY

35th President of the United States: 1961 - 1963

Remarks at Amherst College Upon Receiving an Honorary Degree

October 26, 1963

Mr. McCloy, President Plimpton, Mr. MacLeish, distinguished guests, ladies and gentlemen:

I am very honored to be here with you on this occasion which means so much to this college and also means so much to art and the progress of the United States. This college is part of the United States. It belongs to it. So did Mr. Frost, in a large sense. And, therefore, I was privileged to accept the invitation somewhat rendered to me in the same way that Franklin Roosevelt rendered his invitation to Mr. MacLeish, the invitation which I received from Mr. McCloy. The powers of the Presidency are often described. Its limitations should occasionally be remembered. And therefore when the Chairman of our Disarmament Advisory Committee, who has labored so long and hard, Governor Stevenson's assistant during the very difficult days at the United Nations during the Cuban crisis, a public servant of so many years, asks or invites the President of the United States, there is only one response. So I am glad to be here.

Amherst has had many soldiers of the king since its first one, and some of them are here today: Mr. McCloy, who has long been a public servant; Jim Reed, who is the Assistant Secretary of the Treasury; President Cole, who is now our Ambassador to Chile; Mr. Ramey, who is a Commissioner of the Atomic Energy Commission; Dick Reuter, who is head of the Food for Peace. These and scores of others down through the years have recognized the obligations of the advantages which the graduation from a college such as this places upon them to serve not only their private interest but the public interest as well.

Many years ago, Woodrow Wilson said, what good is a political party unless it is serving a great national purpose? And what good is a private college or university unless it is serving a great national purpose? The library being constructed today, this college, itself--all of this, of course, was not done merely to give this school's graduates an advantage, an economic advantage, in the life struggle. It does do that. But in return for that, in return for the great opportunity which society gives the graduates of this and related schools, it seems to me incumbent upon this and other schools' graduates to recognize their responsibility to the public interest.

Privilege is here, and with privilege goes responsibility. And I think, as your president said, that it must be a source of satisfaction to you that this school's graduates have recognized it. I hope that the students who are here now will also recognize it in the future. Although Amherst has been in the forefront of extending aid to needy and talented students, private colleges, taken as a whole, draw 50 percent of their students from the wealthiest 10 percent of our Nation. And even State universities and other public institutions derive 25 percent of their students from this group. In

March 1962, persons of 18 years or older who had not completed high school made up 46 percent of the total labor force, and such persons comprised 64 percent of those who were unemployed. And in 1958, the lowest fifth of the families in the United States had 41/2 percent of the total personal income, the highest fifth, 44 1/2 percent. There is inherited wealth in this country and also inherited poverty. And unless the graduates of this college and other colleges like it who are given a running start in life--unless they are willing to put back into our society those talents, the broad sympathy, the understanding, the compassion--unless they are willing to put those qualities back into the service of the Great Republic, then obviously the presuppositions upon which our democracy are based are bound to be fallible.

The problems which this country now faces are staggering, both at home and abroad. We need the service, in the great sense, of every educated man or woman to find 10 million jobs in the next 21/2 years, to govern our relations--a country which lived in isolation for 150 years, and is now suddenly the leader of the free world--to govern our relations with over 100 countries, to govern those relations with success so that the balance of power remains strong on the side of freedom, to make it possible for Americans of all different races and creeds to live together in harmony, to make it possible for a world to exist in diversity and freedom. All this requires the best of all of us.

Therefore, I am proud to come to this college whose graduates have recognized this obligation and to say to those who are now here that the need is endless, and I am confident that you will respond.

Robert Frost said:

Two roads diverged in a wood, and I--
I took the one less traveled by,
And that has made all the difference.

I hope that road will not be the less traveled by, and I hope your commitment to the Great Republic's interest in the years to come will be worthy of your long inheritance since your beginning.

This day devoted to the memory of Robert Frost offers an opportunity for reflection which is prized by politicians as well as by others, and even by poets, for Robert Frost was one of the granite figures of our time in America. He was supremely two things: an artist and an American. A nation reveals itself not only by the men it produces but also by the men it honors, the men it remembers. In America, our heroes have customarily run to men of large accomplishments. But today this college and country honors a man whose contribution was not to our size but to our spirit, not to our political beliefs but to our insight, not to our self-esteem, but to our self-comprehension. In honoring Robert Frost, we therefore can pay honor to the deepest sources of our national strength. That strength takes many forms, and the most obvious forms are not always the most significant. The men who create power make an indispensable contribution to the Nation's greatness, but the men who question power make a contribution just as dispensable, especially when that questioning is disinterested, for they determine whether we use power or power uses us.

Our national strength matters, but the spirit which informs and controls our strength matters just as much. This was the special significance of Robert Frost. He brought an unsparing instinct for reality to bear on the platitudes and pieties of society. His sense of the human tragedy fortified him against self-deception and easy consolation. "I have been," he wrote, "one acquainted with the night." And because he knew the midnight as well as the high noon, because he understood the ordeal as well as the triumph of the human spirit, he gave his age strength with which to overcome despair. At bottom, he held a deep faith in the spirit of man, and it is hardly an accident that Robert Frost coupled poetry and power, for he saw poetry as the means of saving power from itself. When power leads man towards arrogance, poetry reminds him of his limitations. When power narrows the areas of man's concern, poetry reminds him of the richness and diversity of his existence. When power corrupts, poetry cleanses. For art establishes the basic human truth which must serve as the touchstone of our judgment.

The artist, however faithful to his personal vision of reality, becomes the last champion of the individual mind and sensibility against an intrusive society and an officious state. The great artist is thus a solitary figure. He has, as Frost said, a lover's quarrel with the world. In pursuing his perceptions of reality, he must often sail against the currents of his time. This is not a popular role. If Robert Frost was much honored during his lifetime, it was because a good many preferred to ignore his darker truths. Yet in retrospect, we see how the artist's fidelity has strengthened the fibre of our national life.

If sometimes our great artists have been the most critical of our society, it is because their sensitivity and their concern for justice, which must motivate any true artist, makes him aware that our Nation fails short of its highest potential. I see little of more importance to the future of our country and our civilization than full recognition of the place of the artist.

If art is to nourish the roots of our culture, society must set the artist free to follow his vision wherever it takes him. We must never forget that art is not a form of propaganda; it is a form of truth. And as Mr. MacLeish once remarked of poets, there is nothing worse for our trade than to be in style. In free society art is not a weapon and it does not belong to the sphere of polemics and ideology. Artists are not engineers of the soul. It may be different elsewhere. But democratic society--in it, the highest duty of the writer, the composer, the artist is to remain true to himself and to let the chips fall where they may. In serving his vision of the truth, the artist best serves his nation. And the nation which disdains the mission of art invites the fate of Robert Frost's hired man, the fate of having "nothing to look backward to with pride, and nothing to look forward to with hope."

I look forward to a great future for America, a future in which our country will match its military strength with our moral restraint, its wealth with our wisdom, its power with our purpose. I look forward to an America which will not be afraid of grace and beauty, which will protect the beauty of our natural environment, which will preserve the great old American houses and squares and parks of our national past, and which will build handsome and balanced cities for our future.

I look forward to an America which will reward achievement in the arts as we reward achievement in business or statecraft. I look forward to an America which will steadily raise the standards of artistic accomplishment and which will steadily enlarge cultural opportunities for all of our citizens. And I look forward to an America which commands respect throughout the world not only for its strength but for its civilization as well. And I look forward to a world which will be safe not only for democracy and diversity but also for personal distinction.

Robert Frost was often skeptical about projects for human improvement, yet I do not think he would disdain this hope. As he wrote during the uncertain days of the Second War:

Take human nature altogether since time began... And it must be a little more in favor of man, Say a fraction of one percent at the very least... Our hold on the planet wouldn't have so increased.

Because of Mr. Frost's life and work, because of the life and work of this college, our hold on this planet has increased.

Note: The President spoke at 11:50 a.m. at the field house after receiving an honorary degree of doctor of laws. In his opening words he referred to John J. McCloy, chairman of the board of trustees of Amherst College, Calvin H. Plimpton, president of the college, and Archibald MacLeish who spoke just prior to the President. (See also Item 440.)

John F. Kennedy, Remarks at Amherst College Upon Receiving an Honorary Degree Online by Gerhard Peters and John T. Woolley, The American Presidency Project https://www.presidency.ucsb.edu/node/236577

EL The Bloodlines

Kennedy

November 22, 1963 JFK was on his way to give a speech at Trade Mart in Dallas, when he was assassinated. The speech is copied in entirety at the back of this letter for you, as it is long. They are the words the only other President (Lincoln being the first) America has ever had. He never got to say them because of what he alluded to in his speech prior, which will be copied in full below as it is important. This is a section of the unspoken speech.

"I am honored to have this invitation to address the annual meeting of the Dallas Citizens Council, joined by the members of the Dallas Assembly... Ignorance and misinformation can handicap the progress of a city or a company, but they can, if allowed to prevail in foreign policy, handicap this country's security. In a world of complex and continuing problems, in a world full of frustrations and irritations, America's leadership must be guided by the lights of learning and reason or else those who confuse rhetoric with reality and the plausible with the possible will gain the popular ascendancy with their seemingly swift and simple solutions to every world problem.

There will always be dissident voices heard in the land, expressing opposition without alternative, finding fault but never favor, perceiving gloom on every side and seeking influence without responsibility. Those voices are inevitable. But today other voices are heard in the land voices preaching doctrines wholly unrelated to reality, wholly unsuited to the sixties, doctrines which apparently assume that words will suffice without weapons, that vituperation is as good as victory and that peace is a sign of weakness. At a time when the national debt is steadily being reduced in terms of its burden on our economy, they view that debt as the single greatest threat to our security. At a time when we are steadily reducing the number of Federal employees serving every thousand citizens, they fear those supposed hordes of civil servants far more than the actual hordes of opposing armies.

We cannot expect that everyone, to use the phrase of a decade ago, will "talk sense to the American people." But we can hope that fewer people will listen to nonsense. And the notion that this Nation is headed for defeat through deficit, or that strength is but a matter of slogans, is nothing but just plain nonsense.

I want to discuss with you today the status of our security because this question clearly calls for the most responsible qualities of leadership and the most enlightened products of scholarship. For this Nation's strength and security are not easily or cheaply obtained, nor are they quickly and simply explained. There are many kinds of strength and no one kind will suffice. Overwhelming nuclear strength cannot stop a guerrilla war. Formal pacts of alliance cannot stop internal subversion. Displays of material wealth cannot stop the disillusionment of diplomats subjected to discrimination.

Above all, words alone are not enough. The United States is a peaceful nation. And where our strength and determination are clear, our words need merely to convey conviction, not belligerence. If we are strong, our strength will speak for itself. If we are weak, words will be of no help.

But in today's world, freedom can be lost without a shot being fired, by ballots as well as bullets. The success of our leadership is dependent upon respect for our mission in the world as well as our missiles on a clearer recognition of the virtues of freedom as well as the evils of tyranny.

Finally, it should be clear by now that a nation can be no stronger abroad than she is at home. Only an America which practices what it preaches about equal rights and social justice will be respected by those whose choice affects our future. Only an America which has fully educated its citizens is fully capable of tackling the complex problems and perceiving the hidden dangers of the world in which we live. And only an America which is growing and prospering economically can sustain the worldwide defenses of freedom, while demonstrating to all concerned the opportunities of our system and society.

It is clear, therefore, that we are strengthening our security as well as our economy by our recent record increases in national income and output by surging ahead of most of Western Europe in the rate of business expansion and the margin of corporate profits, by maintaining a more stable level of prices than almost any of our overseas competitors, and by cutting personal and corporate income taxes by some $11 billion, as I have proposed, to assure this Nation of the longest and strongest expansion in our peacetime economic history.

My friends and fellow citizens: (note how he doesn't belittlingly state, "hey everyone" like the fool Obama.) I cite these facts and figures to make it clear that America today is stronger than ever before. Our adversaries have not abandoned their ambitions, our dangers have not diminished, our vigilance cannot be relaxed. But now we have the military, the scientific, and the economic strength to do whatever must be done for the preservation and promotion of freedom.

The strength will never be used in pursuit of aggressive ambitions it will always be used in pursuit of peace. It will never be used to promote provocations it will always be used to promote the peaceful settlement of disputes.

We, in this country, in this generation, are by destiny rather than by choice the watchmen on the walls of world freedom. We ask, therefore, that we may be worthy of our power and responsibility, that we may exercise our strength with wisdom and restraint, and that we may achieve in our time and for all time the ancient vision of "peace on earth, good will toward men." That must always be our goal, and the righteousness of our cause must always underlie our strength. For as was written long ago: "except the Lord keep the city, the watchmen waketh but in vain."

April 27, 1961 President John F. Kennedy gave the following (unedited) speech at Waldorf-Astoria Hotel, New York City. After this speech, he passed Executive Order No. 11110 giving the power to create it's own currency back to the American people that had been taken long ago. This order is still valid today but was locked away and not broadcasted, no one hardly knows it exists today. Because he effectively destroyed the Illuminati stronghold over the American people, he was murdered and his accomplishment hidden. I have copied the entire speech below. Please read it all, even though it's long. This is one of the most meaningful speeches ever given by an American.

“The President and the Press"

"Mr. Chairman, ladies and gentlemen:

I appreciate very much your generous invitation to be here tonight.

You (speaking to the journalists and reporters) bear heavy responsibilities these days and an article I read some time ago reminded me of how particularly heavily the burdens of present day events bear upon your profession. You may remember that in 1851 the New York Herald Tribune under the sponsorship and publishing of Horace Greeley, employed as its London correspondent an obscure journalist by the name of Karl Marx.

We are told that foreign correspondent Marx, stone broke, and with a family ill and undernourished, constantly appealed to Greeley and managing editor Charles Dana for an increase in his munificent salary of $5 per installment, a salary which he and Engels ungratefully labeled as the "lousiest petty bourgeois cheating."

But when all his financial appeals were refused, Marx looked around for other means of livelihood and fame, eventually terminating his relationship with the Tribune and devoting his talents full time to the cause that would bequeath the world the seeds of Leninism, Stalinism, revolution and the cold war. If only this capitalistic New York newspaper had treated him more kindly; if only Marx had remained a foreign correspondent, history might have been different. And I hope all publishers will bear this lesson in mind the next time they receive a poverty- stricken appeal for a small increase in the expense account from an obscure newspaper man.

I have selected as the title of my remarks tonight "The President and the Press." Some may suggest that this would be more naturally worded "The President Versus the Press." But those are not my sentiments tonight. It is true, however, that when a well known diplomat from another country demanded recently that our State Department repudiate certain newspaper attacks on his colleague it was unnecessary for us to reply that this Administration was not responsible for the press, for the press had already made it clear that it was not responsible for this Administration.

Nevertheless, my purpose here tonight is not to deliver the usual assault on the so-called one party press. On the contrary, in recent months I have rarely heard any complaints about political bias in the press except from a few Republicans. Nor is it my purpose tonight to discuss or defend the televising of Presidential press conferences. I think it is highly beneficial to have some 20,000,000 Americans regularly sit in on these conferences to observe, if I may say so, the incisive, the intelligent and the courteous qualities displayed by your Washington correspondents.

Nor, finally, are these remarks intended to examine the proper degree of privacy which the press should allow to any President and his family. If in the last few months your White House reporters and photographers have been attending church services with regularity, that has surely done them no harm.

On the other hand, I realize that your staff and wire service photographers may be complaining that they do not enjoy the same green privileges at the local golf courses that they once did. It is true that my predecessor did not object as I do to pictures of one's golfing skill in action. But neither on the other hand did he ever bean a Secret Service man. My topic tonight is a more sober one of concern to publishers as well as editors.

I want to talk about our common responsibilities in the face of a common danger. The events of recent weeks may have helped to illuminate that challenge for some; but the dimensions of its threat have loomed large on the horizon for many years. Whatever our hopes may be for the future for reducing this threat or living with it there is no escaping either the gravity or the totality of its challenge to our survival and to our security a challenge that confronts us in unaccustomed ways in every sphere of human activity.

This deadly challenge imposes upon our society two requirements of direct concern both to the press and to the President two requirements that may seem almost contradictory in tone, but which must be reconciled and fulfilled if we are to meet this national peril. I refer, first, to the need for a far greater public information; and, second, to the need for far greater official secrecy.

The very word "secrecy" is repugnant in a free and open society; and we are as a people inherently and historically opposed to secret societies, to secret oaths and to secret proceedings. We decided long ago that the dangers of excessive and unwarranted concealment of pertinent facts far outweighed the dangers which are cited to justify it. Even today, there is little value in opposing the threat of a closed society by imitating its arbitrary restrictions. Even today, there is little value in insuring the survival of our nation if our traditions do not survive with it. And there is very grave danger that an announced need for increased security will be seized upon by those anxious to expand its meaning to the very limits of official censorship and concealment. That, I do not intend to permit to the extent that it is in my control. And no official of my Administration, whether his rank is high or low, civilian or military, should interpret my words here tonight as an excuse to censor the news, to stifle dissent, to cover up our mistakes or to withhold from the press and the public the facts they deserve to know.

But I do ask every publisher, every editor, and every newsman in the nation to reexamine his own standards, and to recognize the nature of our country's peril. In time of war, the government and the press have customarily joined in an effort based largely on self discipline, to prevent unauthorized disclosures to the enemy. In time of "clear and present danger," the courts have held that even the privileged rights of the First Amendment must yield to the public's need for national security.

Today no war has been declared and however fierce the struggle may be, it may never be declared in the traditional fashion. Our way of life is under attack. Those who make themselves our enemy are advancing around the globe. The survival of our friends is in danger. And yet no war has been declared, no borders have been crossed by marching troops, no missiles have been fired.

If the press is awaiting a declaration of war before it imposes the self-discipline of combat conditions, then I can only say that no war ever posed a greater threat to our security. If you are awaiting a finding of "clear and present danger," then I can only say that the danger has never been more clear and its presence has never been more imminent.

It requires a change in outlook, a change in tactics, a change in missions by the government, by the people, by every businessman or labor leader, and by every newspaper. For we are opposed around the world by a monolithic and ruthless conspiracy that relies primarily on covert means for expanding its sphere of influence on infiltration instead of invasion, on subversion instead of elections, on intimidation instead of free choice, on guerrillas by night instead of armies by day. It is a system which has conscripted vast human and material resources into the building of a tightly knit, highly efficient machine that combines military, diplomatic, intelligence, economic, scientific and political operations.

Its preparations are concealed, not published. Its mistakes are buried, not headlined. Its dissenters are silenced, not praised. No expenditure is questioned, no rumor is printed, no secret is revealed. It conducts the Cold War, in short, with a wartime discipline no democracy would ever hope or wish to match.

Nevertheless, every democracy recognizes the necessary restraints of national security and the question remains whether those restraints need to be more strictly observed if we are to oppose this kind of attack as well as outright invasion. For the facts of the matter are that this nation's foes have openly boasted of acquiring through our newspapers information they would otherwise hire agents to acquire through theft, bribery or espionage; that details of this nation's covert preparations to counter the enemy's covert operations have been available to every newspaper reader, friend and foe alike; that the size, the strength, the location and the nature of our forces and weapons, and our plans and strategy for their use, have all been pinpointed in the press and other news media to a degree sufficient to satisfy any foreign power; and that, in at least one case, the publication of details concerning a secret mechanism whereby satellites were followed required its alteration at the expense of considerable time and money.

The newspapers which printed these stories were loyal, patriotic, responsible and well meaning. Had we been engaged in open warfare, they undoubtedly would not have published such items. But in the absence of open warfare, they recognized only the tests of journalism and not the tests of national security. And my question tonight is whether additional tests should not now be adopted. The question is for you alone to answer.

No public official should answer it for you. No governmental plan should impose its restraints against your will. But I would be failing in my duty to the nation, in considering all of the responsibilities that we now bear and all of the means at hand to meet those responsibilities, if I did not commend this problem to your attention, and urge its thoughtful consideration. On many earlier occasions, I have said and your newspapers have constantly said that these are times that appeal to every citizen's sense of sacrifice and self discipline.

They call out to every citizen to weigh his rights and comforts against his obligations to the common good. I cannot now believe that those citizens who serve in the newspaper business consider themselves exempt from that appeal. I have no intention of establishing a new Office of War Information to govern the flow of news. I am not suggesting any new forms of censorship or any new types of security classifications. I have no easy answer to the dilemma that I have posed, and would not seek to impose it if I had one.

But I am asking the members of the newspaper profession and the industry in this country to reexamine their own responsibilities, to consider the degree and the nature of the present danger, and to heed the duty of self restraint which that danger imposes upon us all.

Every newspaper now asks itself, with respect to every story: "Is it news?" All I suggest is that you add the question: "Is it in the interest of the national security?" And I hope that every group in American unions and businessmen and public officials at every level will ask the same question of their endeavors, and subject their actions to the same exacting tests. And should the press of

America consider and recommend the voluntary assumption of specific new steps or machinery, I can assure you that we will cooperate wholeheartedly with those recommendations. Perhaps there will be no recommendations. Perhaps there is no answer to the dilemma faced by a free and open society in a cold and secret war. In times of peace, any discussion of this subject, and any action that results, are both painful and without precedent. But this is a time of peace and peril which knows no precedent in history.

It is the unprecedented nature of this challenge that also gives rise to your second obligation an obligation which I share. And that is our obligation to inform and alert the American people to make certain that they possess all the facts that they need, and understand them as well the perils, the prospects, the purposes of our program and the choices that we face.

No President should fear public scrutiny of his program. For from that scrutiny comes understanding; and from that understanding comes support or opposition. And both are necessary. I am not asking your newspapers to support the Administration, but I am asking your help in the tremendous task of informing and alerting the American people. For I have complete confidence in the response and dedication of our citizens whenever they are fully informed.

I not only could not stifle controversy among your readers I welcome it. This Administration intends to be candid about its errors; for as a wise man once said: "An error does not become a mistake until you refuse to correct it." We intend to accept full responsibility for our errors; and we expect you to point them out when we miss them.

Without debate, without criticism, no Administration and no country can succeed and no republic can survive. That is why the Athenian lawmaker Solon decreed it a crime for any citizen to shrink from controversy. And that is why our press was protected by the First Amendment the only business in America specifically protected by the Constitution not primarily to amuse and entertain, not to emphasize the trivial and the sentimental, not to simply "give the public what it wants" but to inform, to arouse, to reflect, to state our dangers and our opportunities, to indicate our crises and our choices, to lead, mold, educate and sometimes even anger public opinion.

This means greater coverage and analysis of international news for it is no longer far away and foreign but close at hand and local. It means greater attention to improved understanding of the news as well as improved transmission. And it means, finally, that government at all levels, must meet its obligation to provide you with the fullest possible information outside the narrowest limits of national security and we intend to do it. It was early in the Seventeenth Century that Francis Bacon remarked on three recent inventions already transforming the world: the compass, gunpowder and the printing press. Now the links between the nations first forged by the compass have made us all citizens of the world, the hopes and threats of one becoming the hopes and threats of us all. In that one world's efforts to live together, the evolution of gunpowder to its ultimate limit has warned mankind of the terrible consequences of failure. And so it is to the printing press to the recorder of man's deeds, the keeper of his conscience, the courier of his news that we look for strength and assistance, confident that with your help man will be what he was born to be: free and independent."

John Fitzgerald Kennedy was born in 1917 to Joseph Patrick Kennedy and Rose Elizabeth Fitzgerald. He graduated from Harvard, served in World War II, was a reporter and became a Democratic Congressman before he was Senator and then became the youngest president ever elected.

Let's look into his lineage. Patrick Joseph Kennedy, Sr. (great grandfather) was born in 1824 Dunganstown, Wexford, Ireland and died in Boston, Massachusetts. We can easily go back through Ireland and find Colonel Gilbert Kennedy, born in Scotland. His son moved the family to Ireland. As we march through Scotland, our quest takes us from Gil to his father, Gilbert Keenedey to the Kennedy Clan of the 1100s.

The many spellings we see include Kannady, Kenardy, Kennaday, Kenneyday, Kennediem, MacKennedy, MacUalraig and many more. The clan was very powerful and influenced the region. There was even a saying about them which translates to:

"Twixt Wigtown and the town of Ayr, Portpatrick and the Cruives of Cree. No man need think to bide there, unless he court with Kennedy".

The clan's symbol was a dolphin, and their coat of arms is three crosses, the tips of three sides of the cross are iron crosses but the forth goes down to a point, above is Avise La Fin, which translates to “consider the end”.

One story, passed down through the years tells us that around the last half of the year 1000, a chief (Cunedda) was sent to resist Picto- Scottish sea raids in the south west of Scotland. Cunedda means ugly or grim-headed. His family stayed there and named the area Carrick. In the mid 1100's Gillespie Kennedy was a servant of Carrick. They became blood relatives and in 1372 Robert II rewarded John Kennedy of Dunure, making him chief. This is true, however, the Kennedy's go further back. Before this, they were in Ireland. Brian Boru (aka Brian Caeneddi, Cinneide), born 940, was the first noted Kennedy, according to the Kennedy Clans. He was the son of Cennedig who was head of Dal Cais, a royal free tribe of Munster. His brother took power and when they had an argument about treaties they split. Brian had a few followers and quickly grew in fame as he was very tactful and well liked. He defeated many enemies with his few men. When his brother died, Brian returned to rule the land. Some generations later, the Clan split into three noted groups. During the time of the split we see Kennedy's in Britain and the one's in Scotland we just saw.

Hugh Kennedy fought for Joan of Arc as a Scottish mercenary. The Kennedy lineage is very easy to follow, they are another family who barely changed identities through history. They are known cultists and nobles. We won't spend more time on them as it's so easy to find more details. They run through the Skull and Bones, the catholic and Christian religions but seem mostly kept and used for marriage between all other families. Perhaps their blood is a bit more pure?

I hope you take this point away from this section: It does not matter if you have their bloodline in your veins. YOU have the power to break it. YOU have free choice. JFK and oh so very many many others have come out of these families and exposed them. Most have paid for it with their lives. This does not make the elite unable to be defeated. They are not all-powerful. They are, however, united. Even if you believe they are reptilians or aliens or host bodies, or spawns of Satan himself, you must understand this. They are on our playing field. We own this world. We own our lives and WE own our freedom. I, for one, will have no master here on earth. I will not be infected by their disease when the cure is so simple. You, my dear friend. You have the power to do wondrous things, to take down this corruption looming above you. All you have to do is stand up. That's it. Just stand. Together. With me.

A House Appropriations hearing in 1969, the Defense Department's Biological Warfare (BW) division requested funds to develop with gene-splicing a new disease that will resist and break down a victim's immune system.

"Within the next 5 to 10 years it would probably be possible to make a new infective micro-organism which could differ in certain important respects from any known disease-causing organisms. Most important of these is that it might be refractory to the immunological and therapeutic processes upon which we depend to maintain our relative freedom from infectious diseases."

The funds were approved. AIDS appeared within the requested time frame, and has the exact characteristics specified.

The Club of Rome (Illuminati subgroup like Bilderberg) was founded in 1968. It is a so-called "global think tank" and has taken it upon itself to deal with a variety of international political issues, composed of "scientists, economists, businessmen, international high civil servants, heads of state and former heads of state from all five continents who are convinced that the future of humankind is not determined once and for all and that each human being can contribute to the improvement of our societies."

On September 13, 1973 they published "Regionalized and Adaptive Model of the Global World System" which details how to create ten separate "kingdoms" and rule them accordingly, under the Vatican. One world order.

They have already completed this and are working on the next step: one currency. The "immigration crisis" we see today with the middle east and Africa is due to a war planned before the 70's and designed by this group. If there is destabilization globally with the increase of every stress a country can have (currency differences, language differences, education, religion, everything...), Then, they will put for the idea of changing to one currency, this will relieve the pressure enough so everyone will gladly accept. Next will be religion and that is already here and everyone is pretty okay with it since we have had a one world religion (the Vatican, the second of the three city-states) as long as anyone can remember...2000 BC or so. Of course, at the moment, it is tolerant of other religions and even welcoming them in order to group them under the Vatican's umbrella. All that will be left after all religions have joined together is to simply call them all the same thing.

Today we see the ten kingdoms: NAFTA, SAFTA, AFTA, CEFTA, CISFTA, COMESA, SICA, GCC, and

TPP.
1970 The National Academy of Sciences, in their book "Life Sciences," stated that,
"In little more than two decades DDT has prevented 500 million deaths due to malaria."
All reliable scientific data had consistently demonstrated that DDT was completely safe for both humans and animals. Indeed, DDT was the safest pesticide ever known to mankind, it was inexpensive and could be widely used in third-world countries to control the spread of insect-borne diseases. Accordingly, population-control adherents set out to have DDT banned in the name of saving the environment.
An official of the CIA admitted to a Congressional committee that the spy agency had, for many years, been screening US Mail and telegraph transmissions to overseas locations. Somehow, they never admitted, even to Congress, that they had been spying as well on mail and other communications within the US. Rexford Guy Tugwell, a member of President Franklin Roosevelt's "brain trust" in the 1940's, rewrote the Constitution. You can read more here.
Documents were released by the British, after more than 50 years of suppression, which show the British monarchy, who were cousins of the Czar, secretly with US aid rescued the Czar and his family. So to perpetuate the big lie of royal murder, the Rockefellers financed an elaborate movie "Nicholas and Alexandra" which in its final scenes shows the alleged assassination by the Bolsheviks of the Czar and his family in Siberia. The pro-British monarchy Chicago Tribune had a story headlined "US Aided Rescue of Czar Nichola." Excerpts:
"British government documents which recently were placed in the public record office in London indicate that President Woodrow Wilson backed a secret mission to Russia which may have resulted in the rescue of Czar Nicholas and his family in 1918." and "A retired US official, who has aided the investigations and asked to remain anonymous, said continued secrecy on the part of the British and American governments 'frustrates or makes liars out of all those who are ridiculed for stating the assassination never took place.' 'It is a preposterous claim that full disclosure would strain the relations among any of the involved governments', 'A whole new breed has taken over in all the chancelleries. Certainly there can be little fear anywhere of a Czarist revival.' "
In 1971 President Richard Nixon declared war on Drugs. He proclaimed,
"America's public enemy number one in the United States is drug abuse. In order to fight and defeat this enemy, it is necessary to wage a new, all-out offensive."

This helped bring in "free enterprise" -the umbrella the drug business hides under. Billions and billions go "missing" and are unaccounted for. They go through Shanghai Banks with shipments of drugs through Hong Kong. This has been the case since the Naphtali tribe, as we have seen. We must stop kidding ourselves that drugs are a problem. There is no drug problem besides the Elite. They create the drugs, make most of their income on drugs, and always have, particularly Opium, and disperse it through the United States and all around the world. That is why they have such a fear of legalizing Marijuana. Marijuana been proven by them to be a drug which produces free thought and an inability to stay brainwashed. If they do, they lose a lot of their revenue, even though it would be regulated and taxed. The improbabilities they face of releasing this to society as acceptable, are too numerous. What is everyone was able to be woken up from their mental control? The Elite want their freedoms uninhibited.

Samuel Morse wrote:

"As long as this country maintains its drug traffic, there is not the slightest possibility
that it will ever become a military threat, since the habit saps the vitality of the nation." in 1835 under the pen-name Brutus. This rings true as most quotes do. So, in all likelihood, whatever it is you are addicted to it is not necessarily your fault since the government's goal with drugs has been to get you addicted to them in order to control you easier. However, you have the control and the power to stop. The war on drugs is simply a war on you.

Britain started their drug agenda in 1715, followed by China in 1813 and the US shortly after, kicking it up in gear since the 60's.

1972 One newspaper finally had the courage to break the story to the public, that the Tuskegee Study was finally terminated. By that time, only 125 of the original 400 black men had survived. To this very day, 24 years after the end of that grotesque human experiment, none of the perpetrators of that atrocity have ever been either accused or indicted for their crimes. Typical.

Despite the recommendation of the chairman of the EPA investigating committee which had heard six months of testimony on use of the pesticide, and had determined that DDT was completely safe. When Ruckelshaus outlawed further use of DDT, he signed the death warrant for hundreds of millions of helpless human beings living in third-world countries. To those energized by the dark side, however, the loss of hundreds of millions of human lives was just another day. The World Health Organization published a similar proposal:

"An attempt should be made to ascertain whether viruses can in fact exert selective effects on immune function, e.g., by affecting T cell function as opposed to B cell function. The possibility should also be looked into that the immune response to the virus itself may be impaired if the infecting virus damages more or less selectively the cells responding to the viral antigens."

This is a clinical description of the function of the AIDS virus. The incidence of AIDS infections in Africa coincides exactly with the locations of the W.H.O. smallpox vaccination program in the mid-1970’s. 14,000 Haitians then on UN to Central Africa were also vaccinated in this campaign. Personnel actually conducting the vaccinations may have been completely unaware that the vaccine was anything other than what they were told, blind trust, just like today.

After the war, Stanley Tatom returned to civilian life as a mechanical engineer and businessman, he decided years later to write a book about Fort Knox Gold Retrieval System. He, like many others, never got to finish it for publication because in October 1973 he died on an operating table under some very strange, mysterious circumstances.

Robert L DuPont, Jr. is a research psychiatrist at Harvard and delegate for the US at United Nations

Commission on Narcotic drugs. He is especially knowledgeable about what drugs will do to a person, as it is an area of his research. Francis Marguerite DuPont is deep into research into genetics. Every American uses DuPont products every day. Anything that involves chemicals is under their production. Herbivores and fertilizers for farming. Cosmetics and nylons for women, chemicals for all types of industrial production, textiles of all kinds, cleaning fluids such as when you clothes are dry cleaned. Most medical facilities on the east coast of America is owned and controlled by them. The list can go on and on.

Young Hillary Rodham, a child rapist and murderer, who is active in the Illuminati ceremonies of human sacrifice, helps in the legal ground worked that forced Nixon to resign. Clinton has been groomed all along for the Presidency and is a confirmed Shaman of witchcraft from the Russell Bloodline. Senator Samual J. Ervin, Jr. (D) from North Carolina, headed the Watergate Committee that forced Nixon to resign, confirmed Mason.

1974 Sherman H. Skolnick, and research associates, spent two whole days in New York interrogating the one who claimed to be Alexei Romanov, heir to the throne, and son of Czar Nicholas II. He said his parents lived out their lives in secret exile in Poland, and that some of his sisters, such as Anastasia, were still alive and he has met with two of them in the United States, one living in a suburb of Chicago. As a cover, he stated, he was trained as part of Polish Intelligence, and studied Marxism, and supposedly became part of the Post World War Two Communist regime in Warsaw, using the cover name Michal Goleniewski.

About the time John F. Kennedy was inaugurated President in January 1961, Alexei defected to the US. By a private act of Congress, he was made a US citizen and promised a sizeable pension by the American CIA. His disclosures caused exposure of some 60 Soviet spies in the West. The CIA, he claimed, reneged on his yearly stipend, and he went public through ads such as in the dissident publication in the US "Ramparts Magazine". He wanted publicity to help him collect. A hemophiliac, he had the marks on his feet of having worn for many years metal leg braces, part of a plan to prevent him from falling down and bleeding to death as others with the disease. Soviet dictator Josef Stalin reportedly had an illegitimate son. The offspring, Stalin’s illegitimate grandson, is reportedly US Senator Christopher J. Dodd of Connecticut. His father was also a US Senator who was censured by the US Senate as a result of a scandal. A close associate of Chris Dodd in the past often visited Moscow and Siberia reportedly as part of the "US".

Sun Myung Moon, head of the Unification Church, was Vice President George Bush’s guest at the inauguration and was a major financial contributor to the Washington conservative establishment. President Bush admits the first thing he does in the morning is to read the Washington Times, owned by Reverend Sun Myung Moon and is quoted virtually every hour, on the hour, by Voice of America and on the BBC. The US Justice Department won’t investigate complaints that the Washington Times may be in violation of the Foreign Agents Registration Act and all previous criminal charges were dropped thanks to Ronald Reagan, deep friend, supporter, and student of the Jesuits in the Vatican. When Colonel Oliver North wrote a top secret memo proposing the formation

of a private foundation called the Nicaraguan Freedom Fund, the Washington Times announced the formation of the foundation on their front page. The Times contributed $100,000 to the cause. Moon also founded the World Media Association.
James E. Carter, 39th President, a member of the Anti-American organization known as the Council of Foreign Relations (CFR). In 1978, The Club of Rome commissioned Cyrus Vance, Jimmy Carter's Secretary of State to write The Global 2000 Report. This is a Draconian plan to reduce the world's population by means of wars, famine, diseases, and plagues. The HIV virus and the Aids epidemic became a part of this plan.

The first annual meeting of the National Hospice Organization took place. Senator Edward Kennedy was one of the two keynote speakers, the Organization, named for the Knights Hospitalers aka Templar Knights had the same goal, to promote and allow people "The Right to Die." The Knights of Malta have an ancient history of running drugs and in administering mind altering drugs in their hospitals instead of giving medicine. This ancient activity was carried forth into modern times when London patients were given Brompton Mixture until they died. Brompton Mixture consists of heroin, cocaine, alcohol, tranquilizers, and chloroform water. This mixture is given in the Knights of Malta hospitals to patients every three hours until they died. Euthanasia, or "mercy killing" may seem like a merciful idea, until a person finds out how the people at the top of the Euthanasia movement view things. This view is that it is merciful to get rid of unwanted people but who can say someone is unwanted? Every person is significant. Life matters. Life is important. Hospice, Inc. which is linked to the elite is also provided funding by the Kaiser Foundation.
In 1978, November the Guyana Massacre occurred at Jonestown. From start to finish, the Guyana story was scripted by CIA as yet another social experiment: The controlled society in practice. They practised a technique they had been using in America, sped up the test to find an outcome and they found it would be successful. If the USA don't wake up the test will go "live", the first contractions have begun already. The Hepatitis B vaccine study in 1978 appears to have been the initial means of planting the infection (AIDS) in New York City. Thomas C., a high level security officer at the joint alien-US Government underground base near Dulce, he had learned of and had seen disturbing things and could no longer cope. He decided to desert the facility and take various items with him. "Using a small camera, he took over 30 photos of areas within the multi-level complex. He removed a security videotape from the Control Center which showed various security camera views of hallways, labs, aliens, and US Government personnel. He also collected documents to take with him. Then, by shutting off the alarm and camera system in one of the over 100 exits to the surface, he left the facility with the photos, video, and documents. These 'originals' were hidden after five sets of copies were made."
Thomas was ready to go into hiding. But, when he went to pick up his wife and young son, he found a van and government agents waiting and wife and son gone. It became apparent to him that his wife and son would be used in biological experiments and were not going to be returned unharmed.

These files are known as the Dulce Papers.

One of the most famous criminals was a serial killer named Ted (Theodore) R. Bundy. It is not publicly known why he killed so many innocent victims. Ted Bundy told his girlfriend Elizabeth Kendall that "the force" caused him to kill. Bundy’s confession to her was given after his final arrest in Florida. Elizabeth wrote down his confession as he gave it to her over the phone. Ted said,

"I don’t have a split personality. I don’t have blackouts. I remember everything I’ve done. Like Lake Sammamish. We went out to Farrell’s for ice cream after eating hamburgers. It wasn’t like I had forgotten or couldn’t remember, but it was just over...gone...the force wasn’t pushing me any more. I don’t understand it. The force would just consume me."

"The force" is the very term that high level Satanists use to describe the power that they believe in, which they believe can be used for either good or evil. The movie Star Wars surprisingly used the Illuminati’s term "the force" as part of the instilling of acceptance by planting the concept into the public's thinking and goals, so that the conspiracy becomes an "open conspiracy" with the general public promoting the drive toward witchcraft as the world religion and its One-World-Government.

This has happened to countless people through history, everyone who shines light on them is extinguished. But there is always hope. The elite tell us everything, they are compelled to. We must pay attention to see and when we see we must be open minded and act. We saw when the first Bush coined the phrase "New World Order" as well as "a thousand points of light"; and before him, we see Social Security, Federal Government, IRS all of which are not legal or able to be enforced legally to anyone. You think they control you but that is the lie they bring you up in because they have no control. Every time citizens figure this out and react we have seen the government crumbles instantly. Listen to Lindsey Williams' talks on this. He is extremely insightful and was trained by the elite. He can be found on youtube.

Ted Rabouin, claims he’s the only "former" high priest of the Church of Wicca. Rabouin left the practice of witchcraft in 1980 when he had an experience he will never forget. The Westborough Fire Department responded to a fire at Rabouin’s home, a fire he says was started by Satan. "The thick door burst right off the hinges and ignited. He, or it, was just a black shape. There were burn foot marks on the floor," No other witch of such high rank has ever left the practice of witchcraft as Rabouin has done. "They are either deceiving others, or they are deceived themselves," Rabouin said. "It’s Satan, even if they don’t know it themselves. It’s Satan."

In 1981 Pierre Plantard took over as Grand Master of the Prieure de Sion. 1984, December, 12 Los Angeles Times quotes Pope John Paul II stating, "Don’t go to God for forgiveness of sins, come to me." committed blasphemy, thus fulfilling prophecy according to the book of Revelation.

1987 Billy Graham stated,

"I used to believe that pagans in far-off countries were lost, were going to hell. I no longer believe that. I believe that there are other ways of recognizing the existence of God, through nature, for instance." Pagans believe that salvation can be obtained through nature which is

completely against Christ belief.
Edgar Woolard, the CEO of E.I. DuPont de Nemours & Co, took over in 1989. The DuPont family also owns water treatment facilities for public water. They own your water. OWN.
In 1990 American Confectionery, Inc., also the owners of Van Duyn Candies who were accused of distributing poisoned candy to American school children. Richard McCall who was the president borrowed $391,000 of the company's funds for his personal use. This theft of company funds was forgiven when he gave up his position and his share of stock so that he no longer had control over a large block of stock. On April, 27, 1988 The Oregonian reported that the company had gone bankrupt, and had filed for bankruptcy in March 1987 even though sales were over $10 million in 1986.
In 1991 New York Times quotes President George Bush as stating,
"Lets forgive the Nazi war criminals." Remember what was said after 9-11? "You're either with us or with the terrorists."

Linda McDonald said victim of Monarch Mind Control programming by Dr. Ewen Cameron (Dr. White) at Allan Memorial Hospital. Linda McDonald at the age of 58 and living in Vancouver, BC was able to prove that Cameron did programming using drugs, electroshock, psychic driving, depatterning, etc, which all continue to this day. CIA had funded Cameron. The US Federal government gave McDonald, via the Canadian government, a $100,000 settlement, if she would not talk.
In 1993 Billy Graham broadcasted his radio show nationwide, called Embrace America 2000. In the Louisiana area, it came over the KJAM Lafayette Station. During the show, Billy Graham told the American people "we need to embrace the New World Order".
In 1992, Agenda 21 was signed and implemented by the UN. Agenda 21 is nothing new.
1993 December 20 George Bush was knighted, by the Queen, as a Knight Grand Cross of the Most Honorable Order of the Bath, for his leadership in the Gulf War, when he sent American soldiers to die for England's interest of their petroleum in Kuwait. Madeline Albright, the American Ambassador to the United Nations, argued strenuously not to intervene in the genocide taking place in Rwanda, April through July of 1994. After the Christian Tutsis had been disarmed by governmental decree in the early 1990s, Hutu-led military forces began to systematically massacre the defenceless Christians, using machetes rather than bullets, (sounds like ISIS huh?). The Hutu forces were able to create a state of abject fear and terror within the helpless population as they systematically butchered hundreds of thousands of them. Madeline Albright also insisted that the word "genocide" must not be used, and that the United Nations forces stationed in Rwanda were not to be allowed to intervene. Just like everyone is censored today and soldiers today are not allowed to save children from being raped, tortured and starved in front of them repeatedly, for days on end.
On several occasions, United Nations soldiers stationed in Rwanda actually handed over helpless people under their protection to members of the Hutu militia. They then stood by as their screaming

charges were brutally hacked to pieces. At the end of the carnage, in late July 1994, the American government rewarded the Hutu murderers with millions of dollars in foreign aid. Strangely, the American press has remained silent about the fact that almost all of those who were slaughtered were Christians, and it was the policies of our government that were primarily responsible for blocking efforts by neighbouring African countries to intervene. It continues today.

Princess Diana is murdered in the Pont d'Alma tunnel (meaning "bridge or passage of the Moon Goddess") on August 31, 1997 as part of a ritual to goddess Diana as well as to get rid of competition. The Windsors, Merovingians, were very much involved in this ritual murder as they hated Diana for being so well loved throughout the world. She was not of the bloodline, the marriage was disapproved of from the start and her gaining adoration simply would not suit. She had to be taken out.

1998 FLASHPOINT feature article Texe Marrs, retired US. Air Force Intelligence Officer, author, and Living Truth Ministry principal. According to Tex Marrs:

"Bilderbergers' Secret Agenda Revealed: Another item of police state business covered at the Bilderberger meeting had to do with patriots' influence on the worldwide net. US delegates to the Bilderbergers conclave were warned about the Internet troublemakers in America who are spreading ... unfavorable information on the World Wide Web." "The elite complained that the American dissidents are effectively exposing the elite's agenda. Thus, they must be monitored, censored, and eventually snuffed out." "It was generally acknowledged by the Bilderberger elite that it is America's patriotic "conspiracy theorists" who, almost single-handedly, are preventing the elitist's grand plan for global domination from becoming a reality." "One Bilderberger leader complained: "The pesky American resisters are very persuasive. They know too much. They have been able to convince citizens in England, Germany, Italy, Japan, and around the globe to reject our initiatives. Their use of the world computer net must be stifled before it is too late!"

Doesn't that sound like Anonymous? Poor Illuminati, I hope they continue to destroy your best laid plans though you try to infect them with your agents. We are the truth and we will win.

Onassis & Li

Let's continue with the families, now that we are almost caught up to current day.

We have learned a bit about the Onassis family already but let's look closer. Aristotle Socrates Onassis married widow Jackie Kennedy. Jaqueline Bouvier Kennedy Onassis' father was a member a club that mirrored the Order of the Garter. Her mother was Senator Thomas Gore's daughter. Needless to say, she was well connected before her marriage. Aristotle died in 1975 and, unfortunately, his heir had died two years before. His daughter was found dead in a bathtub a few years later and his illegitimate son, who he had with his mistress, Anna Maria Sofia Cecilia Kalogeropoulou Callas was also "dead" on the day of his birth, March 30, 1960. It's an interesting note as it is the first child of the families that was born in the same time Obama is said to have been born. Especially with both parents being Turkish-Greek, which could easily be Obama's true heritage. Let's look further into the line.

Aristotle Socrates Onassis (aka Ari, Aristotelis Sokratis) was born January 20, 1906 in Karatass, Smyrna (also Smirne), Greece (now Turkey) and moved to Buenos Aires, France, and Greece. If you take a look at him it is clear to see he was "top notch". We will note a few things. We have already shown the link of Onassis to the Mafia and traced them back to it's creation by Mazzini in Italy. He, being the new godfather, was deeply involved in opium trade through the Golden Triangle.

About this time US State Department issued a plan to disarm all nations and arm the United Nations. Document Number 7277 is entitled Freedom From War: The Program for General and Complete Disarmament in a Peaceful World. It details a three stage plan (they like things in three's), the final stage in which "no state would have the military power to challenge the progressively strengthened UN Peace Force."

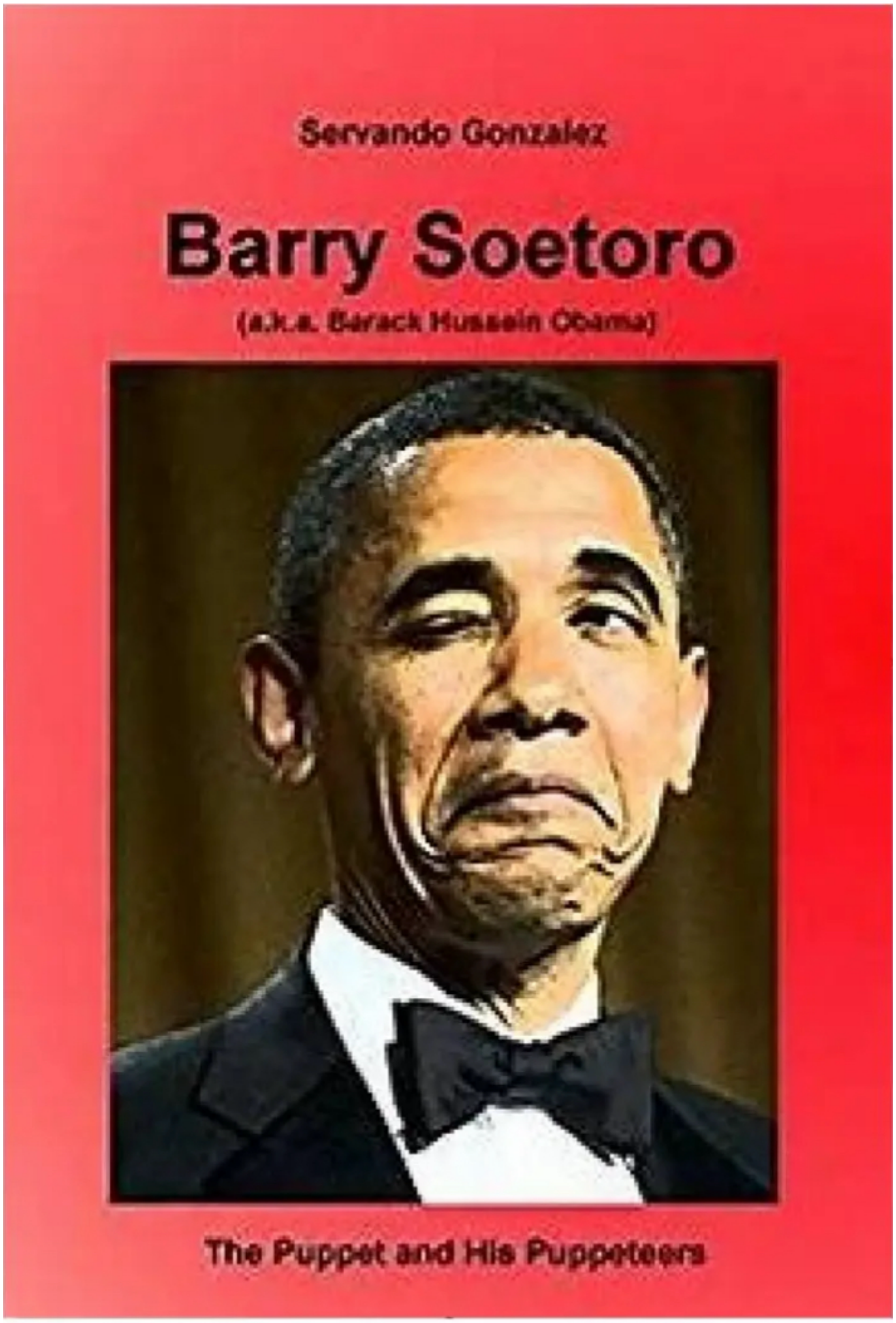
Once Joseph died, JFK and Bobby were finally “free” to attack the elite. They arrested Wally Bird, who owned the Air Thailand (the line used for shipping Onassis opium under CIA's Air Opium program), arrested Mafiaman Jimmy Hoffa, and declared the $73 million in fake Hughes land liens, deposited them with SF Bank of America, which declared them forgeries.

You see, in March 1957, a small group had come up with a very detailed plan on how to acquire their own airline in order to smuggle even more opium around the world. Unable to use commercial airlines in USA, any longer, they noticed Howard Hughes. His stonewall for the commercial control over his airline made him the perfect target. The plan fell together and Onassis was the executor. He has Howard Hughes kidnapped, as we touched on before, from his bungalow at the Beverly Hills Hotel, using Hughes' own men. Hughes is shot full of heroin for thirty days and later dragged to a cell on Onassis' island, Skerpiog. Onassis now has more power in the US with the Hughes Empire, already controlled Nixon, and other Hughes purchased politicians. Hughes' double played him out for years. When JFK found out about this, once his brother had died, he rose up.

Onassis put up an elite team of assassins to murder Castro since JFK wasn't going with the plan. JFK and Bobby set up a "justice team" and arrested the assassins. Onassis is beyond enraged, as you can imagine, and turns the assassins onto JFK. JFK created the "Group of 40". JFK's assassination was going to take place as a triple execution, together with Diem and Nhu in Vietnam. Diem and Nhu were whacked as scheduled. This is not the only thing going on with JFK that would have gotten him murdered. If one plot didn't work, the next wave would come.

Another person who found out about the earlier deal between Joseph Kennedy and Onassis, Senator Estes Kefauver,planned a speech on the Senate floor exposing the Mafia operations and the members: Onassis, Kennedy, Eugene Meyer, Lansky, Roosevelt, etc. He ate a piece of Apple Pie laced with sodium morphate (poison), and had a heart attack on the Senate floor. There is no such thing as freedom of speech.

THE ELITE WANT TO GET RID OF ALL OLD PEOPLE SO THEY WOULDN’T NEED TO PAY 💰 OUT SOCIAL SECURITY CHECKS & THEY WANT ALL HEALTHY ORGANS, [Obama Care ICD9E978
Georgia House of Representatives - 1995/1996 Sessions
HB 1274 - Death penalty; guillotine provisions Code Sections
17-10-38- / 17-10-44]


Servando Gonzalez
Barry Soetoro
(a.k.a. Barack Hussein Obama)
The Puppet and His Puppeteers

Barry Hussain Soetoro care ICD9E978 Georgia House of Representatives - 1995/1996 Sessions
HB 1274 - Death penalty; guillotine provisions Code Sections
17-10-38- / 17-10-44

A SPECIAL PRESENTATION: !MOST IMPORTANT! THE TRUE ORIGIN OF COVID-19 REVELATION WATCH OUT AGENDA 2030

Warning! The following is not intended to scare you or psychologically scar your mental health, but however, this presentation was made to alert you to important information you may have missed.

Greetings citizens of the world. Welcome to the final decade for the old world order. We're sure you have noticed this year stands out from any other year you've experienced before. And rightfully so, because they are wasting no time to get a head-start on this decade's list of events they have planned for you.
Between 2020 and 2030 there is a global plan to aggressively remove humanity from its usual activity and reform every detail of its existence. This plan is called Agenda 2030, and it is not a conspiracy theory but an officially published document by the United Nations which you should most certainly take this free time you have gained now in lockdown to research and educate yourself on. Links will be provided in the video description below.

(do your own research on Agenda 2030, everything described in their document is worded with sugar coated fluff to entice support and lure in its targeted demographic. You conclude its true meaning, and character of the UN's representatives, by watching how they maneuver on the world-stage dealing with much of the same exact goal challenges in other crumbling nations, as well as follow bread crumb trail evidence like The Georgia Guidestones, and predictive programming hidden in entertainment media.)

Before we summarize the outline of Agenda 2030's goals, let us first highlight the things your government advanced with or had voted on to pass while the masses were heavily distracted with round-the-clock media panic streaks, and left suddenly at home struggling to find what to use for toilet paper.
Make no mistake about it, the Covid-19 pandemic, otherwise known as the coronavirus, is a tool that is being used to help contain populations that were protesting against their governments or protesting broken treaties, which all were reaching a boiling point towards the end of last year. We have proof that exercises were taking place last year to prepare for the pandemic, we will link those documents below.
A year ago, in March of 2019, the Chinese government smuggled Covid-19 into their country on a ship from Canada, as they had infiltrated and taken the virus into their own custody with intentions to use it as a bioweapon.

The CIA's Amazon spyware home appliance Alexa admittedly confirmed According to event 201 the government planned this event, created the virus & had a simulation how countries would react.

This simulation occurred October 18 2019. The government released the virus among the population & has lost control of the outbreak.

A link to learn more and discover the origin of the Coronavirus will also be linked below.

If you had been closely following our reports, then you should already know that hundreds of citizens of Hong Kong joined operation Vendetta for the Anonymous Million Mask March November 5th last year on Guy Fawkes Day. Hong Kong has been undergoing extreme changes to its system with stricter facial recognition surveillance which uses advanced AI for citizen ranking, and we'll explain later how this all ties in with Agenda 2030.

Understandably their citizens recognized these changes as tyranny over them and so had been resisting their Communist leaders with peaceful protests to beg them for democracy. This has turned violent as Hong Kong authorities were ordered to seize and detain protestors, which only made more citizens angry and confirmed that they were being oppressed.
As tensions built last November, it is no coincidence that suddenly the virus which they kept ready to unleash was finally set loose on the Chinese, in the Trojan horse of a fruit bat, which dramatically shifted power back to the State and scared protesters back into self isolation.
Other protests around the globe were also effected in this same way. Recently In Canada, the Wet'suwet'en tribe of British Columbia, and the Mohawks of Kanesatake began protesting their treaties being broken with the Canadian government as oil pipeline construction was being forced on their protected territories.
First Nations reserves in Canada have protection treaties from the Queen to have their rights respected by the Canadian government, but now are being violated by corporate and industrial demands and interests. In response to these violations, these First Nations people stood on the railways to block trade coming into Canada by train in protest
until a promise of negotiation was given to them. But now since the quarantine lockdowns enforced by the coronavirus has elevated State power, the tribes were forcefully removed from the railways and the pipelines are now continuing forward without consent or compromise given to them. This is typical of tyrants to use these tactics to bend the arms of their resisters while evading blame and pinning it on some conveniently timed national or global crisis.

theres-still-no-deal-in-wetsuweten-but-pipeline- construction-is-ongoing
Protests in France, Italy, and Iran also came to a halt due to the widespread panic of the global pandemic. Are we seeing a pattern yet for how world governments work together to maliciously seize power? They all have ties to each other through trade and promise of deals to them if they comply, how could they resist when evil consumed their hearts from the beginning when power was first given to them?

Communist dictators only see the greater good in their own selfish pursuits and benefits which relies on the city systems to function as a well oiled machine, treating its worker citizens as their property and its fuel, rather than people, of which they dictate virulently.
They will always lie and fight dirty to win over their will, using power plays on the people, because there is no limit to power for them. None of this can be an accident, the timing is too convenient and the benefits always go back to the global elite and Ruling class.
Additionally they used the media distraction to divert attention to sneak in some more draconian laws to be passed. Here are some of the bills that were voted on while you all were scared and with your attentions kept preoccupied with a sudden threat to your security and livelihood:

The House voted on the Reauthorization of the freedom act 2020 H.R. 1672. The EARNIT Bill a Power Grab to invade encrypted emails.
The 'stay at home' enforcement is a psychological practice run, which, in essence, lightly mimics introverted living, preparing millennials to cope with self containment the way that they would be held in FEMA camps. They are also using this chance to test out a universal basic income, while preconditioning everyone to psychologically get used to the system failing, so that you will be mentally stable when the big one hits and expecting their rescue.

The Corona simulation seeks to condition you to value authority as trustworthy and helpful to coexist with and live under in a state of emergency. They want you to see military personnel as your friends and get you used to their uniforms and level of control over you.
The sum of all of these changes happening at once are presets for Agenda 2030, which, referring back, is a plan to reset society and reboot it to a dramatically different system; which requires the old system to be destroyed.
A new system which seeks to spy on every citizen's daily actions with even more stricter surveillance to rank all citizens as the Chinese do to their people, a system which seeks to eliminate cash and property ownership, and go completely digital using RFID microchip hand implants to replace credit cards.
A system which seeks to eliminate all classes, personal belongings, and assets promising to treat everyone to the same shared experience of life under a socialist utopia; gifted to you by big brother and the all watching eye of its tentacles of power. Agenda 2030 is not a utopia for those who value freedom, traditional family, and privacy.

This is why we see these rights being trampled over now, they are testing to see how much you are willing to give up in trade for more and more security and "free" stuff. It is a human bate lure to trap you, luring you to enslavement. Do not let it tempt you. This kind of future is pure imprisonment of freewill itself, and a death promised servitude to serve your all ruling masters of the State.

To stop it you're going to need to arm yourself with knowledge and grow with our already growing resistance. With the new powers gained from this pandemic scare, the elite plan to use them to purposely destabilize the already fragile United States economy, and ignite a class war with the target of destroying the middle class.

Non essential businesses are being liquidated. Businesses everywhere are already refusing to accept cash with fear of transmitting the virus on circulating dollar bills. After all this they can use it as an example of how the fiat cash based currency reached its finish, and then go on to form a cashless society from the wake of the chaos.

If we DON'T call them out now as a collective or take actions to stop them they are just going to continue to make even more devastating power plays like they did this year to bring all nations down to their knees and keep the poor begging the rich for a solution; which they already premeditated and pre-mapped out precisely for this moment, and it is called 'Agenda 2030'.

Please follow the links below to learn more about Agenda 2030. What you are seeing is a ruling strategy of intentionally causing the problem only to own the pre-planned solution in the end. They wanted us to peacefully hand them this power with our belief in man-driven climate change.

But now since they saw the massive negative reactions and doubts to their climate change campaign they've ran for decades, they have now switched their methods to a more sinister plan to seize global control of all commerce and sovereignty. Please remain vigilant and do not trust the same people that used 9/11 to forge the Patriot Act in place.

Stop trusting your Presidents and Prime Ministers, they all have reserved hide away spots in subterranean bunkers which they pledge allegiance for. They all are in on this together and their AMO is exactly the same each time they use it, and this should all be too familiar to you by now.

The True Origin Of The Saudi SARS Coronavirus

Last year on March 2019 a mysterious shipment was caught smuggling Coronavirus from Canada. It was traced to a Chinese agent working at a Canadian Lab. An investigation linked the engines to Chinese Biological Warfare Program from where the virus is suspected to have leak or was it set loose causing the Wuhan Coronavirus outbreak.

The report on Coronavirus being a bioweapon has caused a major international controversy and is suppressed actively and highly by the corporate pay mainstream media.

The Saudi SARS Sample:

On June 13, 2012 a 60-year-old Saudi man was admitted to a private hospital in Jeddah, Saudi Arabia, with a 7-day history of fever, cough, expectoration, and shortness of breath. He had no history of cardiopulmonary or renal disease, was receiving no long-term medications, and did not smoke.

The Canadian Lab:

Egyptian Virologist Dr. Ali Muhammad Zaki isolated and idientifyed a previously unknown Coronavirus from his lungs after routine Diagnostics failed to identify the unknown agent. Zaki contacted Ron Fouchier a leading Virologist at the Erasmus Medical Center in Rotterdaam Netherlands for advice. Here are the chest radiographs of the patient.
First day of admission
Two days later

Four days after admission.

Gottscheer sequence the virus from a sample sent by Zaki. Fouchier, she has not used a Broad Spectrum Real-Time Polymerase Chain Reaction method to test fore distinguishing features of a number of known current Coronaviruses that are known to infect humans.
Frank Plumber

Meanwhile, in a very strange turn of events, renowned scientist Frank plumber who received the Saudi SARS Coronavirus sample and was working on Coronavirus (HIV) vaccine in the Winnipeg based Canadian lab from where the virus was smuggled by Chinese Biowarfare agents has died in mysterious conditions in Nairobi, Kenya.
This undated file image released by the British Health Protection Agency shows an electron microscopic image of the core in the virus. Part of the family of viruses that cause ailments including the common cold and SARS, which was first identifide in the Middle East. This Coronavirus sample was sent to Scientific Director Dr. Frank Plumber of Canada's National Microbiology Laboratory in Winnipeg directly from Fouchier who received it from Zaki.

Unfortunately Dr. Frank Plumber who received the Saudi SARS Coronavirus in a sample and was working on Coronavirus HIV vaccine in the Winnipeg-Based Canadian Lab died of mysterious conditions in Nairobi Kenya. the virus was reportedly stolen from the Canadian Lab by Chinese Biowarfare Agents when the Coronavirus arrived in Canada's Winnipeg Facility on May 4th 2013 from a Dutch Lab.
The Canadian Labratory which has the virus grew up stocks and use that to assess diagnostic test in Canada. Winnipeg scientist worked to see which animal species can be infected with the new virus. Research was done in conjunction with the Canadian Food Inspection Agencies National Lab.

The national Center for Foreign Animal Diseases, which is found housed in the same complex as the National Microbiology Laboratory.
The National Microbiology Laboratory has a long history of offering comprehensive testing services

for Corona Viruses and isolated and provided the first genome sequence of the SARS Corona virus and identified another Coronavirus NL63 in 2004. This Winnipeg-based Canadian Lab was targeted by the Chinese Agents and what could be termed as biological espionage?

In March 2019 in a mysterious event a shipment of exceptionally virulent viruses from Canada's NML ended up in China. They were like; viruses from Canada's National Microbiology Laboratory were smuggled to China. The event caused the major scandal with BIO Warfare experts questioning. Why was Canada sending lethal viruses to China.
Scientist from the National Microbiology Laboratory said that the highly lethal viruses were for a potential bio-weapon following an investigation. The incident was traced to Chinese Agents working at National Microbiology Laboratory four months later in July 2019. A group of Chinese Virologist were forcibly dispatched from the Canadian Laboratory.
The Laboratory is Canada's only level four facility and one of only a fiew in North America equipped to handel the world's deadliest diseases including Ebola, SARS, Bubonic plague Novel and Virulent H1N1 H7N9, H5N1, H3N2, H10N8, H5N6, H5N8, Avian H5, Influenza, Orthopox, Smallpox Variola, Monkeypox, Arenaviruses, Lassa, Filoviruses, Ebola, Marburg,
Paramyxoviruses, Hendra, Nipah, Yersinia Pestis, Pneumonic Plague, Arboviruses, Dengue, Chikungunya, Zika, MERS-CoV Coronaviruses and many others. The National Microbiology Laboratory scientist who was escorted out of the Canadian Lab along with her husband. Another biologist and members of her research team is believed to be a Chinese Bio Warfare Agent.

Dr. Xiangguo Qiu. Xiangguo Qiu, She was the head of the vaccine development Academy viral therapy section in the National Microbiology Laboratory Natural Pathogens program. Dr. Xiangguo Qiu is an outstanding Chinese scientist born in Tianjin. She primarily received Hart Medical Doctor degree from a Bay Medical University in China in 1985 and came to Canada for Graduate Studies in 1996 later on.

She was affiliated with the Institute of Cell Biology and the Department of Pediatrics and child health of the University of Manitoba Winnipeg. She was not engaged with studying pathogens, but somehow a certain shift took place in 2006. She began studying powerful viruses in the facility the viruses that were shipped from the Canadian Lab to China was studied by her in 2014.
The viruses were macchiato, Junam, Rift, Valley Fever, Crimean Congo Hemorrhagic Fever and Hendra. Dr. Xiangguo Qiu is married to another Chinese scientist. Dr. Keding Cheng. who is also affiliated with the National Microbiology Laboratory. Specifically the Science and Technology core. Dr. Cheng is primarily a bacteriologist who shifted to Virology.
The couple is responsible for infiltrating Canada's Laboratory with many Chinese agents as students from a range of Chinese scientific facilities directly tied to China's biological warfare program. These facilities are one: Institute of military Veterinary End Academy of medical sciences. Tianjin

Two: Center for Disease Control and prevention in the Chengdu Military Region.
Three: Wuhan Institute of Virology in Hubei. Four: Institute of Microbiology in Beijing sources say Dr.

Xiangguo Qiu and her husband Dr. Keding Cheng was escorted from the Canadian Lab in Winnipeg on July 5th 2019, since then the University of Manitoba has ended their appointments reassign her graduate students and caution to all staff, students and faculty members about traveling to China all of the four facilities collaborated with Dr. Xiangguo Qiu who within the context of the Ebola Virus, the Institute of Military Veterinary join the study on the Rift Valley Fever Virus While the Institute of Microbiology joined a study on Marburg Virus.

Noticeably the drug used in the latter study. Everybody has been tested successfully by the Chinese Academy of Military Medical Sciences with a designation JK 05 originally a Japanese Patent registered in China in 2006 against Ebola. Another viruses however, the studies by doctor Qiu are considerably more advanced.
Apparently vital fore the Chinese biological weapons development the case of CoronaVirus, Ebola, Nipha, Marburg or Rift Valley Fever viruses. The Canadian investigation is ongoing and questions remain to whether previous shipments to China with other viruses or other essential preparations took place from 2006 to 2018. Dr. Gary Kobinger former Chief of Special Pathogens at Public

Health Agency of Canada Winnipeg and Dr. Xiangguo Qiu met with Dr. Kent Brantly and Dr. Linda Mobula, assistant professor at Johns Hopkins School of Medicine and the physician who administered ZMapp to Brantly in Liberia when he was infected with Ebola during the 2014-16 outbreak. Dr. Xiangguo Qiu also collaborated in 2018 with three scientists from the United States Army Medical Research Institute of Infectious Diseases in Maryland. Studying post-exposure immunotherapy for to Ebola and Marburg virus in monkeys. A study supported by the U.S. Defense Threat Reduction Agency.

Dr. Xiangguo Qiu made at least five trips over the school year of 2017 to 2018 to the Wuhan National Bio Safety Laboratory of Chinese Academy of Sciences, which was certified four biosaefty level-four standards in January 2017 in August 2017, the National Health commission of China approved research activities involving Ebola, Nipha and Crimean Congo Hemorrhagic Fever Virus is of the Wuhan Facility coincidentally the Wuhan National Biosafety Laboratory is located only 20 miles away from the Huanan Seafood Market, which is the epic center of the Coronavirus outbreak now dubbed the Chinese CoronaVirus.
The Wuhan National Bio Saftey Laboratory has found that the Chinese Military Facility Wuhan Institute of Virology and is linked to China as Biological Warfare Program. It was the first ever live in the country designed to meet biosaftey level-four standards, the highest biohazard level, meaning that it would be qualified to handle the most dangerous pathogens in January 2018. The laboratory

was operational for Global experiments on biosafety level-four pathogens.
The Wuhan Institute has studied Coronaviruses in the past including the strain that causes Severe Acute Respiratory Syndrome SARS, H5N1 Influenza Virus Japanese Encephalitis and Dang, but after a laboratory leak of SARS incident in 2004, the former Ministry of Health of China Initiated the construction of preservation Laboratories for high level pathogens such as SARS Coronavirus and Pandemic Influenza Virus in the 2015 Academic Paper.

It states that more than 40 Chinese facilities are involved in Bio-weapon production, China's Academy of Medical Science is actually developed Ebola Drug called JKO-Five, but little has been divulged about it for the defense facilities possession of the virus prompting speculation on it's Ebola sells are part of China's bio-weapon Warfare Arsenal. Ebola is classified as a category, a bioterrorism agent by the United States Centers for Disease Control and Prevention, Meaning it could be easily transmitted from person to person that would result in high death rates.
The CDC list. Nipha, has a category C, substance a deadly emerging pathogen that could be engineered for mass decimation. China's Biological Warfare Program is believed to include a full range of traditional Chemical and biological agents with a wide variety of Delivery Systems including Artillery Rockets. Aerial Bombs. Sprayers and Short-Range Ballistic Missiles. China's national strategy of Military Civil Fusion has highlighted biology as a priority and the peoples Liberation Army to be at the Forefront of expanding and exploiting this knowledge.
The peoples Liberation Army is pursuing military applications force biology and looking into promising intersections with other disciplines, including brain science, supper computing and artificial intelligence since 2016.

The central military commission has funded projects on Military brain science Advanced biometrics systems biological and biomedical materials. Human Performance advancement and a New Concept biotechnology in 2016, the potential strategic value of genetic information led to Chinese government to launch the national bank, which intends to become the worlds largest repository of such data. It aims to develop and utilize China's valuable, genetical resources Safeguard National Security and bioinformatics and advanced China's capability to seize the Strategic commanding Heights in the domain of biotechnology Warfare Chinese military's interest in biology is an emerging domain of warfare if Fulled by strategists who talked about potential genetic weapons and the possibility of a bloodless victory.
We are Anonymous. We are Legion. We do not forgive. We do not forget. To the governments of China and Canada. We demand that you stop the testing of dangerous viruses and the creation of even more deadly bio-weapons as you can see if what is going on. Things can become much worse. If an even more towerful virus, you test, manages to get loose and destroys all of humanity! We will now be watching. Humanity from all around our planet Earth. It is time to rise and put an end on all facilities that does nothing but test and create even more deadly viruses let out of humanity show

them how tired we are. If not we all will be confined in our homes like prisoners. So let them expect all of us.
We are you, We always were, You expected yourself. You are Anonymous. Good luck.

There’s Still No Deal in Wet’suwet’en But Pipeline Construction Is Ongoing
Nearly one month later, a proposed title deal is still not signed and pipeline opponents are calling for a shutdown, citing concern over the COVID-19 pandemic.
by Sarah Berman Mar 25 2020, 3:00am ShareTweet
Snap
A Wet'suwet'en solidarity rally in Ottawa February 24. Photo courtesy The Canadian Press
A natural gas company with a $6.6 billion plan to build a pipeline through northern British Columbia is continuing to clear forest and deliver pipe despite an Indigenous community’s calls to shut down in response to the coronavirus pandemic.

Members of the Wet’suwet’en Nation, who faced down militarized police in early February, say that Coastal GasLink should halt construction of worker camps on their territory while the community is dealing with a global health crisis.
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This week pipeline opponents launched a letter-writing campaign aimed at suspending construction on Wet’suwet’en territory. “In addition to ongoing and unjustified infringements on protected Indigenous rights, the work now brings to Wet’suwet’en people an unacceptable heightened risk of COVID-19, as potentially infected outside workers are being permitted to come and go through the territory,” reads one letter circulated on social media.
According to a statement by Coastal GasLink on March 17, the company has “cleared an additional 6 percent of the right-of-way” and delivered 19 kilometres of pipe to storage facilities near Chetwynd, B.C. over the last month.
The threat of COVID-19 spread has suspended all Wet’suwet’en meetings, including talks on a proposed deal between hereditary chiefs, B.C., and Canada.
“We are not doing any public meetings currently and do not have a date set when we will continue with our clan meetings,” Wet’suwet’en Chief Na’moks, who also goes by John Risdale, said in an email Monday. “We have to consider the safety of our people and all who reside on our territory.”
The proposed deal, which was announced following weeks of nation-wide solidarity blockades on March 1, is said to build on a Supreme Court of Canada ruling that acknowledged Wet’suwet’en leaders’ title rights were never “extinguished” by the province. While details of the agreement have not been released while Wet’suwet’en members review it, if signed, the deal could potentially give the nation more leverage in fighting the Coastal GasLink pipeline set to run through their territory.
“I think it’s a good way through,” Chief Woos, who also goes by Frank Alec, said of the proposal earlier this month. “That arrangement spells out a memorandum of understanding with some

agreed-upon items, and work that needs to be done soon.”

One member of the Gidimt’en clan of the Wet’suwet’en Nation told VICE that no feasts happened before the coronavirus restrictions were put in place. The Wet’suwet’en hereditary system of governance requires consensus at the feast hall on major decisions, members say.

Advertisement

The Wet’suwet’en standstill comes one month after Canadian police dismantled Indigenous-led blockades meant to highlight the Wet’suwet’en struggle for self-determination.

On February 24, Ontario Provincial Police arrested Tyendinaga Mohawk people for blockading rail lines in solidarity with the Wet’suwet’en Nation. Throughout February dozens of people were arrested across the country for blocking ports, highways, and political offices in support of the hereditary chiefs.

Demonstrations continued into early March, from the steps of the B.C. legislature to Quebec rail lines. Five more protesters who occupied a government office in Victoria were arrested on March 5. By the following week, when Canada’s chief medical officer advised against group gatherings, most blockades had come down.

Jennifer Wickham, who works as a media coordinator for Gidimt’en camp on Wet’suwet’en territory, said that RCMP have increased their presence near the work camps since the proposed deal was announced. She said that RCMP or private security have been following anyone who leaves the camps on the main service road.

“There is no direction to our police officers to follow persons leaving camps,” RCMP Corporal Madonna Saunderson said in an emailed statement. “We have recently received and responded to traffic-related complaints.”

Saunderson said the RCMP continues to work out of the nearby town Houston, B.C., instead of a mobile unit on the access road near Wet’suwet’en camps.

Advertisement

Glenn Greenwald: Why privacy matters Over the last 16 months, as I've debated this issue around the world, every single time somebody has said to me, "I don't really worry about invasions of privacy because I don't have anything to hide." I always say the same thing to them. I get out a pen, I write down my email address. I say, "Here's my email address. What I want you to do when you get home is email me the passwords to all of your email accounts, not just the nice, respectable work one in your name, but all of them, because I want to be able to just troll through what it is you're doing online, read what I want to read and publish whatever I find interesting. After all, if you're not a bad person, if you're doing nothing wrong, you should have nothing to hide." Not a single person has taken me up on that offer.

Glenn Greenwald in Why privacy matters - TED Talk https://www.ted.com/talks/glenn_greenwald_why_privacy_matters

The primary reason for window curtains in our house, is to stop people from being able to see in. The reason we don’t want them to see in is because we consider much of what we do inside our homes to be private. Whether that be having dinner at the table, watching a movie with your kids, or even engaging in intimate or sexual acts with your partner. None of these things are illegal by any means but even knowing this, we still keep the curtains and blinds on our windows. We clearly have this strong desire for privacy when it comes to our personal life and the public.
Joshua in The Crypto Paper https://github.com/cryptoseb/CryptoPaper#let-me-explain-further
[...] But saying that you don't need or want privacy because you have nothing to hide is to assume that no one should have, or could have, to hide anything -- including their immigration status, unemployment history, financial history, and health records. You're assuming that no one, including yourself, might object to revealing to anyone information about their religious beliefs, political affiliations, and sexual activities, as casually as some choose to reveal their movie and music tastes and reading preferences.

Barry Hussain Soetoro
Obama care ICD9E978 Georgia House of Representatives - 1995/1996 Sessions
HB 1274 - Death penalty; guillotine provisions Code Sections 17-10-38-/ 17-10-44
2014 ICD-9-CM Diagnosis Code E978
Legal execution •ICD-9-CM E978 is a billable medical code that can be used to indicate a diagnosis on a reimbursement claim, however, E978 should only be used for claims with a date of service on or before September 30, 2015. For claims with a date of service on or after October 1, 2015, use an equivalent ICD-10-CM code (or codes).
E978 describes the circumstance causing an injury, not the nature of the injury.

- You are viewing the 2014 version of ICD-9-CM E978.
- More recent version(s) of ICD-9-CM E978: 2015.
- No ICD-10-CM code(s) convert to ICD-9-CM E978

Applies To

- All executions performed at the behest of the judiciary or ruling authority whether permanent or temporary] as:
- asphyxiation by gas
- beheading, decapitation (by guillotine)
- capital punishment
- electrocution
- hanging
- poisoning
- shooting
- other specified means

E977 ICD9Data.com E979

ICD-9-CM codes are used in medical billing and coding to describe diseases, injuries, symptoms and conditions. ICD-9-CM E978 is one of thousands of ICD-9
-CM codes used in healthcare. Although ICD-9-CM and CPT codes are largely numeric, they differ in that CPT codes describe medical procedures and services. Can't find a code? Start at the root of ICD-9-CM, check the
2014 ICD-9-CM Index or use the search engine at the top of this page to lookup any code.
Code ICD 9 E 978 Makes Execution by Guillotine Legal
Under Obamacare
freedomoutpost.com/2013/11/icd-9-international-medical-codin
A faithful reader sent me a code and asked me to investigate how it ties into the larger scale of things.
The specific code sent to me will make any American's hair stand up on the back of their neck. The code is ICD 9 E 978. After reading this code I decided that it was my duty to investigate further and get to the bottom of why we have a medical code in the United States for "Legal Execution." Below are my results.
www.centralx.com/diseases/icd889.htm
All executions performed at the behest of the judiciary or ruling authority [whether permanent or temporary] as:
asphyxiation by gas /*]beheading, decapitation (by guillotine) |/*]capital punishment
]electrocution\/]hanging/*poisoning|/* shooting/*Jother specified means/*INJURY
UNDETERMINED WHETHER ACCIDENTALLY OR
PURPOSELY/*]INFLICTED[/*]/list]cdn.
freedomoutpost.com/wp-
content/uploads/2013/11/Uncle-Sam- to reports, more than 68,105 new medical codes are being added due to the Obamacare monstrosity. Doctors all across the nation have been complaining due to the overwhelming burden it places upon them. Just the time consumption alone, making sure these codes are accurate, will inevitably take time away from the doctor/patient relationship creating a barrier of paperwork while destroying the personal experience with your doctor.
While these doctors are correct to state it will be even more of a burden, they are not correct to state this has come out of Obamacare itself. Let me explain.
These codes were not created by Obamacare, however Obamacare is trying to implement every American citizen under international codes to link us to the
"international" system. These codes were actually created by the WHO (World Health Organization) . The WHO is a specialized agency of the United Nations.
First, it is important to know what the meanings of the codes are to grasp a better understanding of the importance and depth of this "internal takeover" that has been going on for many years right under our noses. The first www.who.int/classifications/icd/en/
(International Classification of Diseases) was created in 1893.

WHO took control of clinical modifications in 1948.
[*1955 the WHO modified the ICD to track mortality rates./*]1977 the 9th revision was published aka "ICD
9 Medical Codes" that are being used today within our medical system. /*]1988 Congress passed "Medicare
Catastrophic Coverage Act" requiring the use of ICD 9 codes on all claims. /* 1996 Mandated codes to be of highest possible specificity.//*/list]cdn.
freedomoutpost.com/wp-
content/uploads/2013/11/KS-WHO.jpg of October 1, 2014 the ICD 9 coding will no longer be used. ICD 10
"mandated" medical coding will add 68,105 codes. The ICD-10-PCS (Procedure Code System) has an additional 86,000 codes totaling approximately 155,000 new medical codes for medical professionals. I can see why this would be overwhelming, and I am sure this will be a burden on doctors. One does have to wonder why doctors have not spoken out against this international coding system in the first place. This "international"
United Nations based code is used to track people in all countries that have signed on with the WHO plan. Their
"coding" and "data" collections have been implemented all around the globe with a few exceptions. So why are American doctors being required to use international medical coding? Why haven't doctors pointed out these are international codes? Why did congress sell out the American people in 1988 by passing the "Medicare Catastrophic Coverage Act" going along with and forcing "Sovereign United States Citizens" under
"International rules, regulations, and coding"?
en. wikipedia.
org/wiki/World_Health_Organization#Assembly_and
The World Health Organization (WHO) is a specialized agency of the United Nations (UN) that is concerned with international public health. It was established on 7
April 1948, with its headquarters in Geneva, Switzerland. WHO is a member of the en.wikipedia. org/wiki/United_Nations_Development_Group Its predecessor, the en.wikipedia.
org/wiki/League_of_Nations_Health_Organization, was an agency of the en. wikipedia. org/wiki/League_of_Nations
The use of the word "world", rather than "international", emphasized the truly global nature of what the organization was seeking to achieve. The constitution of the World Health Organization had been signed by all 61 countries of the United Nations by 22 July 1946. It thus became the first specialized agency of the United Nations to which every member subscribed. Its constitution formally came into force on the first World Health Day on 7 April 1948, when it was ratified by the 26th member state. The first meeting of the World Health Assembly finished on 24 July 1948, having secured a budget of US$5 million (then GBP£1,250,000) for the 1949 year.

Andrija Stampar was the Assembly's first president, and G. Brock Chisholm was appointed Director-General of WHO, having served as Executive Secretary during the planning stages. Its first priorities were to control the spread of malaria, tuberculosis and sexually transmitted infections, and to improve maternal and child health, nutrition and environmental hygiene. Its first legislative act was concerning the compilation of accurate statistics on the spread and morbidity of disease. The logo of the World Health Organization features the Rod of Aesculapius as a symbol for healing.

The WHO and the World Bank constitute the core team responsible for administering the International Health
Partnership (IHP+). The IHP+ is a group of partner governments, development agencies, civil society and others committed to improving the health of citizens in developing countries. Partners work together to put international principles for aid effectiveness and development cooperation into practice in the health sector.

In addition, the WHO has also promoted road safety.

Each year, the organization marks World Health Day focusing on a specific health promotion topic, timed to match the anniversary of WHO's founding. Recent themes have been drug resistance (2011) and aging
(2012). As part of the United Nations, the World Health Organization supports work towards the en.wikipedia. org/wiki/Millennium_Development_Goals Of the eight Millennium Development Goals, three - reducing child mortality by two-thirds, to reduce maternal deaths by three-quarters, and to halt and begin to reduce the spread of HIV/AIDS - relate directly to WHO's scope; the other five inter-relate and have an impact on world health.

The organization develops and promotes the use of evidence-based tools, norms and standards to support member states to inform health policy options. It oversees the implementation of the International Health Regulations, and publishes a series of medical classifications; of these, three are overreaching
"reference classifications: the International Statistical
Classification of Diseases (ICD), the International Classification of Functioning, Disability and Health (IC) and the International Classification of Health Interventions (ICHI). Other international policy frameworks produced by WHO include the International Code of Marketing of Breast-milk Substitutes (adopted in 1981), Framework Convention on Tobacco Control adopted in 2003) and the Global Code of Practice on the International Recruitment of Health Personnel (adopted in 2010).

The WHO regularly publishes a World Health Report, its leading publication, including an expert assessment of a specific global health topic. Other publications of WHO include the Bulletin of the World Health Organization, the Eastern Mediterranean Health Journal (overseen by EMRO), the Human Resources for Health (published in collaboration with BioMed Central), and the Pan American Journal of Public Health (overseen by PAHO/AMRO). As of 2013, the WHO has 194 member states: all Member States of the United Nations except
Liechtenstein, as well as the Cook Islands and Niue. (A state becomes a full member of WHO by

ratifying the treaty known as the Constitution of the World Health Organization.)
As of 2013, it also had two associate members, Puerto Rico and Tokelau. Several other entities have been granted observer status. Palestine is an observer as a
"national liberation movement" recognized by the
League of Arab States under United Nations Resolution
3118. The Holy See also attends as an observer, as does the Order of Malta. In 2010, Taiwan was invited under the name of "Chinese Taipei".
WHO Member States appoint delegations to the World Health Assembly, WHO's supreme decision-making body. All UN Member States are eligible for WHO membership, and, according to the WHO web site, "other countries may be admitted as members when their application has been approved by a simple majority vote of the World Health Assembly". In addition, the UN observer organizations International Committee of the Red Cross and International Federation of Red Cross and Red Crescent Societies have entered into "official relations" with WHO and are invited as observers. In the World Health Assembly they are seated along the Financing and partnerships.
The WHO is financed by contributions from member states and outside donors. As of 2012, the largest annual assessed contributions from member states came from the United States ($110 million), Japan ($58
million), Germany ($37 million), United Kingdom ($31 million) and France ($31 million). The combined 2012-2013 budget has proposed a total expenditure of $3,959 million, of which $944 million (24%) will come from assessed contributions. This represented a significant fall in outlay compared to the previous
2009-2010 budget, adjusting to take account of previous under spends. Assessed contributions were kept the same. Voluntary contributions will account for $3,015 million (76%), of which $800 million is regarded as highly or moderately flexible funding, with the remainder tied to particular programs or objectives.
cdn.freedomoutpost.com/wp-
content/uploads/2013/11/WHO-and-Bi recent years, the WHO's work has involved increasing collaboration with external bodies. As of 2002, a total of 473 NGOs had some form of partnership with WHO. There were 189 partnerships with international non-governmental organization (NGO) in formal "official relations" - the rest being considered informal in character. Partners include the Bill and Melinda Gates Foundation and the Rockefeller Foundation.
As you can see the WHO supports UN Agenda 21 through the "Millennium Development Goals" "Sustainable Development" agendas. President Obama, as senator, had a hand in attempting to increase U.S. political attention towards Millennium Development Goals, including The Borgen Project which worked with Senator Obama on en. wikipedia. org/wiki/Global_Poverty_Act; a bill requiring the White House to develop a strategy for achieving the goals.
The bill did not pass.
Even more disturbing, is finding out American citizens have been subject to the ICP Medial code for

many years. Thus, giving the United Nations our private information through "coding." This is not only is an invasion of our privacy, but has been done in silence without our knowledge.

The www.dhs.wisconsin.gov/wish/main/shared/injMortICD9Codes.pdf "List of underlying causes of injury death Framework of E-code groupings (ICD-9) 1989 - 1998" conveniently leaves out the definition of code ICD 9 E 978, but does reference it at the bottom of the list as: "1. Includes legal intervention (E970-E978) and operations of war (E990-E999)."

This certainly makes me wonder why DHS would omit ("hide") the code from the chart? Most people won't dig to find out what the "medical code" means unless they have a specific reason to do so. One thing is for sure, whether omitted by DHS or someone else, there is a good reason this code was left out of their document.

They definitely didn't want most people to see what it means. DHS knows this code would create a stir with the American people if they found out there was a code for "Legal Execution," especially with a guillotine and beheading.

www.icd9data.com/2014/Volume1/E000-E999/E970-E979/default.ht also gives a list for "legal intervention.

" www.cdc.gov/nchs/icd/icd10.htm "International Classification of Diseases, Tenth Revision (ICD-10)"

To read more about the "global" coding ICD 9 and 10 see below:

cdn.freedomoutpost.com/wp-content/uploads/2013/11/2013-ARHPC

The questions that need to be asked and answered are:

cdn.freedomoutpost.com/wp-content/uploads/2013/11/th.jpg

Why has the United States been subjected to "International Medical Coding" without our knowledge? /*]Why are we allowing "coding" that goes against our principles and constitution? /*]Why do we have a code for "Legal Execution" which is illegal in America? With the exception of those given the death penalty after trial by jury./*When did the Department of Homeland Security find out about this coding? Why haven't they addressed this (since they are supposed to protect the people)? /*]cdn.freedomoutpost.com/w-content/uploads/2013/11/ICD-10-WHO

Why is DHS sending any kind of "Medical Coding" to the states? *Why haven't the doctors spoken out to make Americans and Medicare recipients aware that their information has been given to an "International body"? /*Why haven't they made people aware that the WHO is a specialized agency of the United Nations and directly linked to the "League of Nations under the guise of collecting data? /*Why would we allow forced medical coding through congressional bills to come from an organization that supports UN Agenda 21, Millennium Development Goals, and supports the eradication of "sprawl" (which is average people like you and I)? /*JIs law enforcement aware of this specific code? If so why haven't they brought this to the attention of the American people?/*]/list]I, of course, do not know the answers to these questions, but I am deeply disturbed that we, the

American People, have been kept in the dark on such an important issue. I was never asked permission for an international organization being able to access any of my information through "coding." I'll bet you were not asked either. It is bad enough the out of control IRS will have complete access to our health information. Now, to make matters even worse, we find out the WHO will have access to every American citizens health information through "medical coding, via Obamacare.

When will enough be enough? When will the United States wake up and refuse to continue funding the United Nations and any organization that is affiliated with it?

One thing is for sure. This coding is directly related and tied to creating their "International One World Government." While the WHO pretends to be for helping people, they create codes for "Legal Execution" by beheading. The more you research, the more you realize that the WHO isn't all roses and sunshine. There is a much darker agenda at play. There is a direct connection between the "elitist" global banks and the WHO. The deeper you research, the more disturbing it gets. While American citizens have trusted our government to spend our money wisely, they have paid the WHO approximately $110 million dollars this year alone. Our government is inching us closer and closer to being controlled by a "One World Government™ system and forcing us to pay for it. The repeal of Obamacare is important to our nation for many reasons, but pulling out of the United Nations and completely defunding them is imperative to our survival as a sovereign country and a free people. Contact your representatives and demand that we defund and pull out of the United Nations now. Let them know about the "International Coding" system that is in place. I am sure many are not aware of this as they normally don't even read the bills before they pass them ref: Obamacare aka ACA. If they won't read their own bills why would we expect them to understand or know that the new medical coding is an expansion of an International Medical Code designed to track the world? This must be stopped. I am not and never have been a
"global citizen"! I am an AMERICAN citizen! I am Red, White, and Blue through and through, and will continue to fight for our country, exposing corruption and spreading truth as long as live.

Read more: freedomoutpost.com/2013/11/icd-9-international-medical-codin

Read more at freedomoutpost.com/2013/11/icd-9-international-medical-codin

Georgia House of Representatives - 1995/1996
Sessions
HB 1274 - Death penalty; guillotine provisions
Page Numbers - 1/2
Code Sections - 17-10-38/ 17-10-44
Prev Bill
Next Bill
Bill Summary
Bill List
Disclaimer

1. Teper 61st
House Comm: SJudy / Senate Comm: /
House Vote: Yeas Nays Senate Vote: Yeas Nays
House Action Senate
1/12/96 Read 1st Time 1/22/96 Read 2nd Time
Code Sections amended:
HB 1274 LC 21 3643

A BILL TO BE ENTITLED
AN ACT

To amend Article 2 of Chapter 10 of Title 17 of the Official Code of Georgia Annotated, relating to the death penalty generally, so as to provide a statement of legislative policy; to provide for death by guillotine; to provide for applicability; to repeal conflicting laws; and for other purposes.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF GEORGIA:

SECTION 1.

The General Assembly finds that while prisoners condemned to death may wish to donate one or more of their organs for transplant, any such desire is thwarted by the fact that electrocution makes all such organs unsuitable for transplant. The intent of the General Assembly in enacting this legislation is to provide for a method of execution which is compatible with the donation of organs by a condemned prisoner.

SECTION 2.

Article 2 of Chapter 10 of Title 17 of the Official Code of Georgia Annotated, relating to the death penalty generally, is amended by striking in its entirety Code Section 17-10-38, relating to death sentences generally, and inserting in lieu thereof the following:

"17-10-38. (Index)

(a) All persons who have been convicted of a capital offense and have had imposed upon them a sentence of death shall, at the election of the condemned, suffer such punishment either by electrocution or by guillotine. If the condemned fails to make an election by the thirtieth day preceding the date scheduled for execution, punishment

1-28 shall be by electrocution.
1-29 (b) In all cases in which the defendant is sentenced to be 1-30 electrocuted executed, it shall be the duty of the trial
1-31 judge in passing sentence to direct that the defendant be
-1-(Index)
LC 21 3643
2-1 delivered to the Department of Corrections for
2-2 electrocution execution at a state correctional
2-3 institution designated by the department."
SECTION 3.
2-4 Said article is further amended by striking in its entirety
2-5 Code Section 17-10-44, relating to death chamber apparatus
2-6 and related matters, and inserting in lieu thereof the
2- 7 following:
2-8 "17-10-44. (Index)
2- 9 The Department of Corrections shall provide a death
2-10 chamber and all necessary apparatus, machinery, and
2-11 appliances for inflicting the penalty of death by
2-12 electrocution or by guillotine.
SECTION 4.
2-13 This Act shall be applicable to all executions occurring on
2-14 or after August 31, 1996. SECTION 5.
2-15 All laws and parts of laws in conflict with this Act
are
2-16 repealed.

Pam Schuffert Confirms Guillotines Stored at Fort Lewis
By Pam Schuffert <truth-4-all@hotmail.com>
http://educate-yourself.org/ps/confrimsguillotinesfortlewis28jun08.shtml
June 28 2008
Pam Schuffert Confirms Guillotines Stored at Fort Lewis (June 28, 2008) (http://educate-yourself.org/ps/confrimsguillotinesfortlewis28jun08.shtml)
Sat, 28 Jun 2008
From: Truth 4 All <truth-4-all@hotmail.com>
To: Ken Adachi
Subject: Please post this ASAP! THANKS!-Pam
STAFF SERGEANT/ARMY RANGER/SPEC OPS MAN FROM FORT LEWIS WASHINGTON THAT I JUST MET WHILE TRAVELING FROM MONTANA TO NORTH CAROLINA REVEALS:

'THE GUILLOTINES ARE REAL AND I WAS GOING TO TRAIN MY MEN IN MY PLATOON TO USE THEM NEXT WEEK IN HIGHLY CLASSIFIED OPERATIONS AT FORT LEWIS...UNTIL YOU TOLD ME 'THEY WILL BE USED ON YOUR FELLOW AMERICANS UNDER COMING MARTIAL LAW!''

NOW he and the men who he told about my reporting, on HOW the guillotines will be used against their fellow Americans, ARE BEING ROUNDED UP AND HUNTED DOWN LIKE DOGS..

Humvees and helicopters surrounging their homes...military pay and all access to bank accounts and credit cards being cut off...and NOW HE IS ON THE RUN! All because they found out the truth about MARTIAL LAW and the guillotines FROM ME and have agreed among themselves to NEVER GO ALONG WITH THIS TERRIBLE NWO AGENDA!

-Pamela Schuffert reporting live from NORTH CAROLINA

I was riding on a bus from BUTTE MONTANA to North Carolina, when I met a young man all dressed up in full and impressive ARMY RANGER uniform. He carried his 445 mag gun and many knives and several phones and military backpack and other equipment. He told me he was a STAFF SERGEANT from FORT LEWIS! Fort Lewis is where many MODERN GUILLOTINES have been stored for a long time, for use in martial law.

I teased him at first and told him I knew all about the MODERN GUILLOTINES in Fort Lewis. HE WAS SHOCKED! He said, 'HOW DID YOU KNOW...THIS IS HIGHLY CLASSIFIED INFORMATION!' He then admitted he was a Christian. I told him that the US MILITARY WAS NOT TELLING THE YOUNG MEN LIKE HIM, but these guillotines will be used on AMERICANS AND CHRISTIANS in the future udner martial law, to behead all NWO resisters.

The longer he listened, the angrier he got. Using a few choice expletives, he said, 'THEY NEVER TOLD US THIS WOULD BE USED ON AMERICANS UNDER MARTIAL LAW...to get RID of all CHRISTIANS and NWO RESISTERS! We THOUGHT they would be used in IRAQ or something!' He then asked me to tell him more and more. He even filmed me.

Finally, so angry at how they were being deceived and brainwashed, he told me,

'I WILL NEVER go along with this NWO agenda! I am A CHRISTIAN! I will contact my men in my platoon (64) and those I can trust who are Christians, I will tell them the TRUTH. I was supposed to go to Fort Hood for more SPECIAL OPS training next week, and THEN RETURN TO TRAIN MY MEN IN HOW TO OPERATE THESE GUILLOTINES!

There is a special underground training center where the guillotines are...we are not allowed to bring in any cameras. cell phones, etc, because of HIGH SECURITY AND SILENCE regarding these guillotines.They are 6 and a half feet high, with hand restraints and a place for a person's head as they stand. We were going to use dummies for practice...BUT NOW I AM REFUSING THIS ASSIGNMENT and I will contact the men under me who I can trust...who will NOT go along with this NWO agenda and will come out instead with HUMVEES, WEAPONS and everything we can get our hands on to fight this NWO agenda!'

We parted in Indianapolis...I wondered about the outcome. I was soon to find out! I called him the next day. He told me he talked to his sister and family and they were shocked...they were all military...they told him, 'HOW DID YOU KNOW ABOUT THIS NWO MARTIAL LAW AGENDA...IT IS ALL HIGHLY CLASSIFIED!'

When he told them about ME (I had given him a copy of my AIRMAN MAGAZINE in it with my famous USAF father's cartoon in it..he was quite amazed and impressed) he told me his USAF aunt would submit my name to USAF intelligence computers to see where I stood in the sight of the USAF. He told me, 'She said you are RED FLAGGED (subject to arrest and interrogation) and are classified by the USAF as A THREAT TO NATIONAL SECURITY!' (ME???A THREAT TO NATIONAL SECURITY??? ALL for telling AMERICA THE TRUTH about coming MARTIAL LAW!)

This ARMY RANGER had told me that IF HE HAD BEEN ON THE SIDE OF THE NWO AGENDA, he was authorized as an ARMY RANGER with highest security clearance and much special ops training to MARCH ME OUTSIDE THE BUS AND SHOOT TO KILL for knowing this classified info...OR he could have called the nearest military base and had vehicles come to arrest me immiediately and take me away for interrogation and termination. THAT IS HOW CLASSIFIED MY INSIDE INVESTIGATING AND INFO REALLY IS! And YESTERDAY when I called him, he had even MORE shocking information for me.

'I AM ON THE RUN NOW...they are trying to pick me up...and my USAF sister too! OUR PAY AND MILITARY SERVICE AND BANK ACCOUNTS HAVE ALL BEEN CLOSED OFF...we cannot access anything now! THEY ARE NOW ARRESTING HALF THE MEN IN MY PLATOON...men I talked to who agreed that THEY WOULD NEVER GO ALONG WITH A NWO MARTIAL LAW AGENDA...all THEIR pay and service and bank accounts have been cut off from them now too....military helicopters and humvees are surrounding their homes..they are being watched and picked up one by one...one man in my platoon defended himself when they broke into his home, SHOOTING FIVE MILITARY SOLDERS TRYING TO TAKE HIM in the process (some were killed) before they were able to arrest him! We are on the run now, my sister and I...they are after us too.....'

I am actively now on the phone with Staff Sergeant Donnie. His aunt who ran my name through USAF computers is now being questioned by USAF authorities. I am SURE they are angry with ME right now as well! They may be searching for me at this time as well....with this military scandal breaking and ME in the middle of it!

GET THIS WORD OUT TO EVERYONE! These brave military men are paying the highest price to say THEY WILL NEVER GO ALONG WITH THIS NWO MILITARY AGENDA to kill innocent Americans and to destroy our Constitution and our freedoms and people of faith and character in our nation. PRAY for Staff Sergeant DONNIE BOYSEL and his sister NOW and for the men they are now hunting down like dogs...to be interogated and KILLED! PRAY ALSO FOR ME! I may be picked up soon for my role in this military scandal.

PRAY FOR THE MERCY OF JESUS to preserve me through all this! FORWARD THIS BREAKING NEWS TO EVERYONE ON YOUR EMAIL LIST! And NOW YOU KNOW....the GUILLOTINES ARE REAL! (Revelation 20:4) He told me they ARE EVERYWHERE...in FORT HOOD, FORT BRAGG, FORT LEWIS..in ALL the US MILITARY BASES including GERMANY where he was stationed... (yes

Europeans will be beheaded for their faith as well in the NEW WORLD ORDER!) PASS THIS ON AND PRAY FOR ME, FOR DONNIE AND HIS CHRISTIAN MEN THEY ARE HUNTING DOWN FROM FORT LEWIS! -Pamela Schuffert reporting LIVE from across the nation

"It is now TIME for the Christians of USA/CANADA to PREPARE for the COMING CRISIS. It will NOT be without PERSECUTION, TESTING and BLOODSHED. I dare say, in fact, that it is TIME for the Christians of North America to PREPARE FOR MARTYRDOM for their faith. END TIME BIBLE PROPHECY is about to unfold in this nation as NEVER BEFORE...and I can prove it!" -

~Pamela Schuffert,
Noted author, investigative journalist, lecturer, radio/television,and Christian evangelist

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The i'm Talkathon starts 6/24/08. For now, give amongst yourselves.
http://www.imtalkathon.com?source=TXT_EML_WLH_LearnMore_GiveAmongst

In case you don't know a 445 mag gun exists here's a picture of one.
The story of my 445 Super Mag
Nov 22, 2016 (https://www.marlinowners.com/posts/3902785/)
About 2 years ago I was in my local gun store and saw a used 336 Youth in 30/30. Living in Indiana the rifle was not a caliber allowed but I had used a CVA Scout reamed to 445 SM. I got the rifle for 275.00 I contacted Nooneman who gave me a price to rebarrel to 445 Super Mag. I got the rifle back after 8 months and the second round sheared the brass. I contacted Nooneman who said I was loading it too hot. Ok I down loaded my 300XTP and again it happened. I sent it to Adam Devine at RPP who worked over the action, gave it some extras like large lever loop and refinish. I got it back and it was beautiful, took it to the range and sheared the brass on first round. I contacted Adam who said send it back. I contacted Brian Pearce at HANDLOADER who confirmed my reloads were well within standards. He said check the head space. I contacted Adam and sure enough it was .030 excess. I contacted Nooneman who Adam returend the rifle and checked it and agreed . It was recut and finally after a year and half I got it back fired seven rounds for function check and put it on GUNBROKER. Did not reach my r
eserve so it now in the safe. Heres a picture
https://www.marlinowners.com/threads/the-story-of-my-445-super-mag.291081/ (https://www.marlinowners.com/threads/the-story-of-my-445-super-mag.291081/)

AMERICAN HOLOCAUST and The Coming NEW WORLD ORDER
This blog is about the coming crisis of MARTIAL LAW and the NEW WORLD ORDER agenda for AMERICA!It also offers HOPE and the CHRISTIAN SOLUTION for their NEW WORLD ORDER's "FINAL SOLUTION."

Saturday, April 18, 2020

ARMY RANGER-Military GUILLOTINES in Fort Lewis-McChord WA

MILITARY INSIDER CONFIRMATION:

"THE MILITARY GUILLOTINES
AT FORT LEWIS-MCCHORD, WA,
ARE REAL."

By Pamela Rae Schuffert presenting investigative journalism from an honest Christian perspective-

SHOCKER INFORMATION FROM
US MILITARY SOURCE IN UNIFORM:

Staff Sergeant ARMY RANGER Spec Ops man Donnie Boysel from Fort Lewis-McChord, Washington, that I met WHILE TRAVELING FROM MONTANA TO NORTH CAROLINA, REVEALS:

"THE MILITARY GUILLOTINES ARE REAL,AND I WAS GOING TO TRAIN MY 64 MEN IN MY PLATOON TO USE THEM NEXT WEEK IN HIGHLY CLASSIFIED OPERATIONS AT FORT LEWIS...UNTIL YOU INFORMED ME:
"THE GUILLOTINES WILL BE USED ON YOUR FELLOW AMERICANS UNDER COMING MARTIAL LAW!'"
But now, Donnie and the men in his military platoon, whom he informed by phone about my reporting, warning them HOW the guillotines will be used against their fellow Americans UNDER MARTIAL LAW, ARE BEING ROUNDED UP by MILITARY SECURITY, AND HUNTED DOWN LIKE DOGS by his military base.

JOINT BASE LEWIS-McCHORD
SERVICE MEMBERS DEFENDING AMERICA
®

Humvees and helicopters are surrounding their homes...military pay and all access to bank accounts and credit cards being cut off...and NOW DONNIE IS ON THE RUN!

Steilacoom
Lakewood
Parkland
Hwy 512
MCCHORD AIRFIELD
JBLM NORTH
JBLM MCCHORD FIELD
Spanaway
I-5
JBLM MAIN
GRAY ARMY AIRFIELD
JOINT BASE LEWIS - MCCHORD
Olympia
Hwy 101
Lacey
ARTILLERY IMPACT AREA
Tumwater
Roy
Yelm
I-5

All because Donnie and his men discovered the truth from me about MARTIAL LAW and the guillotines, and have agreed among themselves to NEVER GO ALONG WITH THIS TERRIBLE NWO AGENDA!

BELOW IS MY FULL REPORT-
****

-Pamela Schuffert reporting live from NORTH CAROLINA summer 2008-

I was riding on a Trailways bus from BUTTE, MONTANA to North Carolina, when I met a young man all dressed up in full and impressive ARMY RANGER uniform. He carried his personal 45 magnum gun and many knives, plus several phones and a camo military backpack with other equipment. Strangely, we were the only two passengers on that bus for many hours. We sat in the back of the bus, talking intensely.

TOP SECRET

AIRMAN
THE PERFECT STORM

He told me his name was Donnie Boysel, and he was a STAFF SERGEANT from FORT LEWIS! Previously other military sources admitted to me that Fort Lewis is where many MODERN GUILLOTINES have been stored for a long time, for use in AMERICA UNDER MARTIAL LAW.

(Since my original interview, the name has now been changed to Joint Base Lewis-McChord.)

I teased him at first and told him I knew all about the MODERN GUILLOTINES in Fort Lewis. HE WAS SHOCKED! He said,
"HOW DID YOU KNOW...THIS IS
HIGHLY CLASSIFIED INFORMATION!"

I replied that I was an independent investigative journalist, and as a concerned Christian it was my job to uncover this kind of truth to warn the American people.
He then admitted he too was a Christian.

I informed him that the US MILITARY WAS NOT TELLING THE YOUNG MEN LIKE HIM the truth: that these deadly guillotines will be used on AMERICANS AND CHRISTIANS in the future under MARTIAL LAW, to then seek to intimidate and behead all "NWO resisters," as the NWO agenda is imposed by force upon the American people.

The longer that Staff Sergeant Boysel listened to me, the angrier he became. Using a few choice military expletives, he then exclaimed,

"THEY NEVER TOLD US THESE GUILLOTINES WOULD BE USED ON AMERICANS UNDER MARTIAL

LAW...to get RID of all CHRISTIANS and NWO RESISTERS!"

"We THOUGHT they would be used in IRAQ or something!" He then asked me to tell him more and more. He even filmed me on his cell phone.

THEY WILL
PERSECUTE
YOU

Finally, becoming so angry at how they were being deceived and brainwashed in the US military, he told me,

"I WILL NEVER go along with this NWO agenda! I am A CHRISTIAN! I will contact my men in my platoon (64) and those I can trust who are Christians, and I will tell them the TRUTH. I was supposed to go to Fort Hood for more SPECIAL OPS training next week, and THEN RETURN TO TRAIN MY MEN IN HOW TO OPERATE THESE GUILLOTINES."
"There is a special partially underground training center where the guillotines are...we are not allowed to bring in any cameras, cell phones, etc, because of HIGH SECURITY AND SILENCE regarding these guillotines."

"They are 6 and a half feet high, with hand restraints and a place for a person's head as they stand. We were going to use dummies for practice."

"BUT NOW I AM REFUSING THIS ASSIGNMENT, and I will contact the men under me who I can trust...who will NOT go along with this NWO agenda, and will come out under martial law instead with HUMVEES, WEAPONS and everything we can get our hands on to fight this NWO agenda!"
However, I was careful to warn him that SECURITY WAS HIGH ON US MILITARY BASES, and his phone calls would be monitored, and he could face severe repercussions from the military once they discovered what he now knew....and how he planned to come out against this NWO agenda with his men. I actually begged him to NOT call his men...but he would not listen.

After hours of heated and intense discussion, we parted in Indianapolis...and I wondered about the outcome. I was soon to find out!

I called Staff Sergeant Boysel the very next day. He told me he talked to his sister and family and they were shocked...they were all military...they told him, "HOW DID YOU KNOW ABOUT THIS NWO MARTIAL LAW AGENDA...IT IS ALL HIGHLY CLASSIFIED!"
When he told them about ME (I had given him a copy of my AIRMAN MAGAZINE, with my famous USAF father's cartoon in it..he was quite amazed and impressed) he told me that his USAF relative would submit my name to USAF intelligence computers to see where I stood in the sight of the USAF.

What I am about to share is a tragic indictment, not against ME, but against just how far America has fallen from her early Christian heritage and integrity, including in the US military.

I have a serious problem with a law-abiding, peaceful and non-violent, unarmed Christian woman (me), her only arrest record being for several peaceful protests to save the unborn at abortion clinics, now being CLASSIFIED AS "A THREAT TO NATIONAL SECURITY"simply for exposing the hidden dangers and threat of THE NEW WORLD ORDER AGENDA UNDER MARTIAL LAW.

He tensely informed me, "My relative said you are RED FLAGGED (subject to arrest and interrogation) and are classified by the USAFas "A THREAT TO NATIONAL SECURITY!"

I remember thinking, "ME??? A "THREAT TO NATIONAL SECURITY"??? ALL for simply telling AMERICA THE TRUTH through my journalism about coming MARTIAL LAW???

Staff Sergeant Boysel had even admitted to me that IF HE HAD BEEN ON THE SIDE OF THE NWO AGENDA, he was authorized as an ARMY RANGER, with highest security clearance and much special ops training, to MARCH ME OUTSIDE THE BUS AND SHOOT ME TO KILL for knowing and publishing this highly classified information.

(Think he couldn't have? I come from a USAF Pentagon military DoD family background from Washington DC, and I know he couldhave...),
OR, he warned, he could have called the nearest military base and had vehicles come to arrest me immediately and take me away for interrogation and termination.

He even said as he looked at me intently, "Realize that the military hates people like you...if they got ahold of you, they would try to prolong your torture for a year or more before they finally killed you..."
(Think they can't? Look at what happens to prisoners in military prisons like ABU GHRAIB and others...their torture often prolonged for YEARS.)

FRIENDS, THAT IS HOW CLASSIFIED MY INSIDE INVESTIGATIVE JOURNALISM AND INFORMATION REALLY IS. And how important it is to expose this truth to the ENDANGERED AMERICAN PEOPLE.

But because Donnie was a Christian, and I was a Christian, he refused to do this to me. HE REALIZED I WAS INNOCENT IN GOD'S SIGHT, and that I was only trying to do the right thing by WAKING UP AMERICA with the truth.

And when I called him the next day, he had even MORE shocking information for me.

"I AM ON THE RUN NOW...military security are trying to pick me up! My PAY AND MILITARY SERVICE AND BANK ACCOUNTS HAVE ALL BEEN CLOSED OFF...I cannot access anything now!"

"THEY ARE NOW ARRESTING HALF OF THE MEN IN MY PLATOON...the men I talked to on the phone who agreed that THEY WOULD NEVER GO ALONG WITH A NWO MARTIAL LAW AGENDA."

"All of THEIR pay and service and bank accounts have been cut off from them now too. Military helicopters and humvees are surrounding their homes. They are being watched and picked up one by one.

"One man in my platoon defended himself when the military police broke into his home, SHOOTING FIVE MILITARY SOLDERS TRYING TO ARREST HIM in the process (some were even killed) before they were able to arrest him! I am on the run now, because they are after me too..."

I am actively now on the phone with Staff Sergeant Boysel (this was written summer 2008). They may even be searching for me at this time as well....with this top secret military scandal breaking

and ME in the middle of it!-END
****

CONCERNED READERS, GET THIS WORD OUT TO EVERYONE. Everything that happened that fateful summer of 2008 REALLY HAPPENED, and the guillotine training program there is still in place to this day.

I was to receive a report a few years later about two Army men stationed there, who read my information and decided to look for this facility themselves. They uncovered it, starting exposing it, and were KILLED.

The traitorous NWO rogue elements inside the US military do NOT want the unsuspecting American people to become informed about this horrific covert NWO agenda.

These brave military men in my 2008 documentary above, paid the highest price possible to say "NO" to the horrific planned beheading of innocent Christians (and other targeted Americans)under MARTIAL LAW.

They laid down their lives and careers to let America know that THEY WILL NEVER GO ALONG WITH THIS NWO MILITARY AGENDA...to round up and murder innocent Americans under MARTIAL LAW, and to destroy our Constitution and our freedoms and people of faith across our nation.

PRAY for DONNIE BOYSEL, and for the men in his former platoon that they hunted down like dogs to be interrogated and possibly KILLED.

FORWARD THIS IMPORTANT INFORMATION TO EVERYONE ON YOUR EMAIL, TEXT AND SOCIAL MEDIA LIST...because the "NWO guillotines agenda" will be activated at last under MARTIAL LAW.

And on April 13th, 2020, a STATE OF NATIONAL EMERGENCY and MARTIAL LAW was finally declared....and with it the Constitution suspended.

And NOW YOU KNOW...."THE REST OF THE STORY":

THE GUILLOTINES ARE REAL!

(Revelation 20:4)

Boysel also warned me that the GUILLOTINES ARE EVERYWHERE ACROSS AMERICA in the US military bases...specifically referring to FORT HOOD, FORT BRAGG, FORT LEWIS, but also admitting they are in many other US MILITARY BASES. Even including in BERLIN, GERMANY where he was once stationed.

Yes, people around the world WILL be beheaded for their faith in Jesus Christ as well in the NEW WORLD ORDER. Bible prophecy cannot lie.

****

"It is now TIME for the Christians of USA/CANADA to PREPARE for the COMING CRISIS. It will NOT be without PERSECUTION, TESTING and tragically, BLOODSHED."

"I dare say, in fact, that it is FAR PAST TIME for the Christians of North America to PREPARE FOR MARTYRDOM for their faith. END TIME BIBLE PROPHECY is about to unfold in this nation as NEVER BEFORE...and I can prove it!" -

-Pamela Rae Schuffert-

Noted author, and independent investigative journalist, lecturer, radio/television, and Christian evangelist

EXECUTIVE OFFICE OF THE PRESIDENT OF THE UNITED STATES

PLAYBOOK FOR EARLY RESPONSE TO HIGH-CONSEQUENCE EMERGING INFECTIOUS DISEASE THREATS AND BIOLOGICAL INCIDENTS

TABLE OF CONTENTS

CHAPTER I – EXECUTIVE SUMMARY

I. PLAYBOOK PURPOSE……PAGE 04

II. POLICY COORDINATION AND EXERCISING THE PLAYBOOK……PAGE 04

III. RISK ASSESSMENT DASHBOARD……PAGE 05

  A. INTERNATIONAL……PAGE 06

  B. DOMESTIC……PAGE 07

IV. SAMPLE PATHOGENS INVOLVED……PAGE 08

V. OTHER KEY CONSIDERATIONS……PAGE 11

CHAPTER II – PLAYBOOK: DECISION-MAKING RUBRICS

I. INTERNATIONAL……PAGE 14

II. DOMESTIC……PAGE 31

CHAPTER III – APPENDIX MATERIAL

I. DECLARATION AND MITIGATION OPTIONS……PAGE 42

II. KEY DEPARTMENTS AND AGENCIES……PAGE 46

  A. INTERNATIONAL……PAGE 46

  B. DOMESTIC……PAGE 52

III. SAMPLE EXERCISES……PAGE 62

IV. COMMUNICATIONS……PAGE 67

V. CONCEPT OF OPERATIONS FOR DOMESTIC RESPONSE……PAGE 68

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CHAPTER I – EXECUTIVE SUMMARY

I. Purpose of the Playbook

The goal of the Playbook For High-Consequence Emerging Infectious Disease Threats and Biological Incidents (Playbook) is to assist U.S. Government experts and leaders in coordinating a complex U.S. Government response to a high-consequence emerging disease threat anywhere in the world with the potential to cause an epidemic, pandemic, or other significant public health event, by providing a decision-making tool that identifies: (1) questions to ask; (2) agency counterparts to consult for answers to each; and (3) key decisions which may require deliberation through the Presidential Policy Directive (PPD)-1 process or its successor National Security Council process. The Playbook also includes sample documents that can be used for interagency meetings that need to be called at each stage. While each emerging infectious disease threat will present itself in a unique way, a consistent, capabilities-based approach to addressing these threats will allow for faster decisions with more targeted expert subject matter input from Federal departments and agencies.

This Playbook is also intended to complement the Biological Incident Annex (BIA) of the Federal Interagency Operational Plans as well as the Department of Health and Human Services (HHS) Pandemic Influenza Crisis Action Plan (PANCAP).

This Playbook has two sections to assist with decision-making: (1) an international response rubric for emerging disease threats that start or are circulating in another country but not yet confirmed within United States territorial borders; and (2) a domestic response rubric drawn from the BIA and PANCAP that addresses emerging disease threats within our nation's borders. Specific triggers for response actions and operational phases for both domestic and international emerging infectious disease threat incidents are outlined. Each section of this Playbook includes specific questions that should be asked and decisions that should be made at multiple levels within the PPD-1 process or its successor National Security Council process.

II. Exercising the Playbook

Per PPD-1, the National Security Council (NSC) and its subordinate policy committees [including the Principals Committee (PC), the Deputies Committee (DC), and the Interagency Policy Committees (IPC)] will serve as the principal forum for consideration of national security policy issues, including emerging infectious disease-related national security threats. Departments and agencies should be regularly convened to review emerging infectious disease threats, as appropriate; highlight any situations that require closer watch, risk assessment, or experimental medical countermeasures (MCM); coordinate outreach and communications with key international stakeholders; inventory department and agency capabilities that can be deployed in various response situations; review infectious disease response planning, including communications on international and domestic response coordination; and regularly schedule exercises to improve interoperability and real-time decision making. At a minimum, such meetings should consist of representatives from HHS (including the Centers for

Disease Control and Prevention (CDC), the National Institutes of Health (NIH), the Assistant Secretary for Preparedness and Response (ASPR), the Office of Global Affairs (OGA) and others), Department of Labor (DOL)/Occupational Safety and Health Administration (OSHA), Department of Defense (DOD), Department of Transportation (DOT), United States Agency for International Development (USAID), Department of State (DOS), Department of Homeland Security (DHS), United States Department of Agriculture (USDA), Environmental Protection Agency (EPA), and members of the Intelligence Community. Regular communications and joint meetings with the Domestic Resilience Group IPC (DRG) or its successor process and its member agencies should be established whenever a high-consequence emerging infectious disease threat has the potential to impact the United States.

In the event an infectious disease threat emerges or evolves rapidly or requires immediate decision-making, the Biological Incident Notification and Assessment (BINA) protocol will be used to convene all relevant departments and agencies.

III. Risk Assessment Dashboard

A key recommendation from the World Health Organization (WHO) is the need to assess the risk of an infectious disease threat before it becomes a Public Health Emergency of International Concern (PHEIC). Based on WHO risk assessment guidance, Table 1 and Table 2 provide dashboards intended to serve as guidance for discussion of how best to assess the risk of an evolving infectious disease threat along four critical dimensions: (1) epidemiology; (2) humanitarian/development/public health impact; (3) security/political stability; and (4) transmission/outbreak/potential for public concern in the United States.

There are several other epidemiologic risk assessment tools that exist for specific disease categories and that have clear criteria for assessing the level of threat. The following dashboards are not intended to supplant these tools, but are intended to overlay other security and humanitarian concerns to achieve a broader picture of the threat. Additionally, a dashboard is not intended to serve or replace a comprehensive risk assessment, but rather serve as a quick snapshot to inform policy makers' strategic decision making processes.

The following tables govern United States decision-making in the event of an emerging infectious disease threat.

Table 1: International Incident: Operational Phases & International Response Rubric

Epidemiologic Rating→	**1a. Normal Ops**	**1b. Elevated Threat**	**1c. Credible Threat**	**2a. Public Health Emergency of International Concern / PHEIC**	**2b. Worsening public health emergency indicators/ PHEIC**	**2c. Improving public health emergency / PHEIC**
Key Epidemiologic Rating						
Other Critical Dimensions ↓						
Humanitarian/development/public health impact						
Security/political indicators						
Transmission/outbreak/potential for public concern in the US						
Overall Assessment						

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Table 2: Domestic Incident: Phases, Stages, Triggering Events and Indicators for Response

	Phase I Primarily Pre-Incident			**Phase 2 Begins Upon Notification When/After an Incident Occurs**		
Phase	**1a**	**1b**	**1c**	**2a**	**2b**	**2c**
Rating	**Normal Operations**	**Elevated Threat**	**Credible Threat**	**Initial Response: Activation, Situational Assessment, and Movement**	**Employment of Resources and Stabilization**	**Intermediate Operations**
Triggering Events	• No specific threat	• Identification of a human case of a high-consequence emerging infectious disease anywhere	• Confirmation of multiple human cases of a PPP anywhere **AND/OR** • Determination of a Significant Potential for a Public Health Emergency	• Demonstration of efficient and sustained human-to-human transmission of a novel virus anywhere **AND/OR** • Declaration of a Public Health Emergency	• Increasing number of cases in U.S. or healthcare system burden that exceed State resource **AND/OR** • State/local request for assistance	• Cases continue to climb with long term service disruption and critical infrastructure impacts **AND/OR** • Presidential Stafford Act declaration **AND/OR** • State/local request for assistance
Key Epidemiologic Indicators		• Identification of a human case of a pathogen of pandemic potential	• Confirmation of multiple human cases	• Demonstration of efficient and sustained human to human transmission		
Humanitarian/ public health Impact Indicators						
Security/Political Stability Indicators						
Overall Risk Assessment						

IV. Pathogens of Pandemic Potential Involved in Incident(s)

A newly emerging infectious disease pathogen may represent a high-consequence threat to human health, which at first may be unknown. For instance, influenza poses a constant threat for emergence into an epidemic or pandemic. Other pathogens have also recently emerged with little or no warning, such as Severe Acute Respiratory Syndrome (SARS), which was first reported in February 2003 and quickly spread to more than 20 countries before it was contained. Determining the primary mode of transmission is critical during the early stages of an emerging infectious disease threat response. However, this information may not be readily available. Initial estimates are likely to be based on limited and incomplete information and will be continually reassessed based on new information.

Key questions about a pathogen that may affect the size, scale, and design of the response include:

1. How is the pathogen transmitted? Can it be transmitted human-to-human, insects, or other animals and how can transmission be prevented or interrupted?

   Sources of information: HHS (ASPR, CDC, NIH), USDA

2. What is the disease impact now and what do we know about its potential impact in the future?

   - Estimates on transmissibility and clinical severity
   - Forecasts and modeling

   Sources of information: HHS (ASPR, CDC, NIH)

3. Can the disease be treated successfully?

   - Are there approved pharmaceutical interventions or experimental MCM in development?
   - Is the pathophysiology of the disease understood and can the disease be successfully treated using other forms of care?

   Sources of information: HHS (ASPR, CDC)

4. Are there tools to mitigate the spread or disinfect contaminated surfaces?

   Sources of information: HHS (CDC, NIH), EPA, USDA

Pathogens that would cause heightened concern include, but are not limited to, novel (non-seasonal) influenza viruses, SARS and other novel coronaviruses, smallpox, filoviruses, flaviviruses, or any micro-organism determined as potentially notifiable under Annex 2 of the International Health Regulations (IHR). Additionally, this guide would apply to novel pathogens and pathogens with high rates of morbidity, mortality and/or transmissibility.

These pathogens include, but are not limited to:

Tier 1 – respiratory pathogens

- Novel influenza viruses: multiplying the historic pandemic attack rate (24% to 38%) times the global population (~7 billion) times the case-fatality ratio (.04% to 60%) would produce an estimate of between 700,000 and 1.4 billion fatalities from a pandemic of a virulent influenza virus strain. 1918 ~2.5% case fatality rate (CFR); 2009 H1N1 0.01% and 0.04% CFR
    - H7N9 – China – 34% case fatality rate (CFR); U.S. H7N9 vaccine stockpiled (has not spread readily from person to person, but could adapt to become more transmissible between people)
    - H5N1 – Asia, Europe, Africa and the Middle East – 53% CFR; U.S. stockpile of H5N1 vaccine (has not spread readily from person to person, but could adapt to become more transmissible between people)
    - H3N2 – this is a current exception to the reporting policy because, while it is still considered to be a novel influenza virus and infections occur sporadically outside of the normal flu seasons, the virus does not spread easily from human to human. Since 2012 when the variant was first identified, infections have occurred via human contact with domestic swine, and there is limited evidence for secondary cases. H3N2 infectious could trigger additional actions if there was documented human-to-human transmission.
    - Other novel influenza viruses – H10N8, H5N6, H5N8, avian H5 viruses in North America
- Coronaviruses: MERS-CoV (reservoir: bats, camels) -18-62% CFR, SARS (reservoir: unknown) - 11-17% CFR
- Orthopox viruses: Smallpox (Variola), monkeypox

Tier 2 – transmission via fluid contact

- Arenaviruses
    - Lassa (reservoir: multimammate rat)-1% CFR
- Filoviruses
    - Ebola (reservoir presumed to be bats, but unconfirmed) - 50% CFR West Africa 2014-2015
    - Marburg (reservoir: bats)-25% CFR
- Paramyxoviruses
    - Hendra (reservoir: bats; intermediate: horses)- 50% CFR
    - Nipah (reservoir: bats; intermediate: pigs)-74% CFR

Tier 3 – vector transmission

- *Yersinia pestis* (pneumonic plague) –fleas from rodents (chipmunks, prairie dogs, ground squirrels, mice, and other mammals (dogs) =>human to human
  100% CFR for delayed treatment
- Arboviruses
    - Dengue, Chikungunya, Zika – primarily mosquitos

Table 3: Sample of pathogens and characteristics that would determine response:

Pathogen	Primary Mode of transmission among people	Clinical Severity	Medical Countermeasures	Transport or Treat in place?	Pandemic potential
Ebola virus	Direct contact with bodily fluids of infected, contaminated surfaces	High	Some experimental	Typically transport	Low, assuming access to healthcare
MERS-CoV	Close contact, respiratory secretions	Can be high, especially in those with underlying conditions	No	Treat in place	Unknown
Influenza	Respiratory secretions, droplets, contact with contaminated surfaces	Can be high, especially naïve populations or in those with underlying conditions	Yes, but strain-specific vaccine must be produced	Treat in place	High for a novel strain adapted to humans

V. Other Key Considerations

- **MCM, Deployment of Medical Personnel, and Biological Sample Sharing:** The existence and available supply of MCM is a key issue in considering the risks associated with an outbreak and the response. MCM availability and development must be prioritized at high levels of the U.S. Government and mobilized early in any emerging infectious threat incident. Additionally, planning (legal, regulatory, logistical, funding) for the deployment of prioritized MCM if available, and their development if not, must also be done early. At the onset of an emerging threat, the inclusion of HHS experts in clinical medicine and research would help to determine whether an HHS Emergency Medical Countermeasures Response Plan is needed. Existing mechanisms for this planning include the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) and the HHS International Sharing of Medical Countermeasures Policy Group. Mechanisms for the international deployment of public health, research, and medical personnel are required, such as the HHS International Policy Group for Personnel Sharing. Finally, similar measures must be considered for sharing samples of biological materials. Sharing of non-influenza samples is coordinated through the U.S. Government Sample Sharing Working Group, led by HHS.

- **Financial and Staffing Resources**: Financial and staffing resource planning, including deliberations on supplemental funding requests, to mount an infectious disease response needs to be considered in early stages with close coordination with the Office of Management and Budget. Collaboration with the host government to reduce issues of duplication and determine the best use of resources for the response is also necessary.

- **Adapting Risk Ratings:** The trigger criteria for evaluating an emerging infectious disease threat as an evolving public health emergency will require continual reassessment of the pathogen, location (urban vs. rural), epidemiology, host nation's capacity to respond, and disruption of health systems. Assessment tools to aid in determining trigger criteria are in continual development and should be frequently reviewed and utilized, as appropriate.

- **Triggers for Activating United Nations (UN) Cluster System and USAID/OFDA DART:** Additionally, we recommend early discussion to determine USAID/OFDA and UN OCHA's triggers for activation within an evolving public health emergency and whether any particular instance of a public health emergency could potentially trigger UN/OCHA or USAID/OFDA thresholds for activation of the cluster system or a DART. USAID/OFDA will communicate with USAID/GH Mission and USAID/OFDA Regional offices in order to monitor disease outbreaks with epidemic/pandemic potential in humanitarian crisis settings. Furthermore, USAID/OFDA will closely coordinate with CDC headquarters and country offices to monitor such outbreaks.

  - **Coordinating Simultaneous U.S. government International and Domestic Responses:** The U.S. government international and domestic responses to evolving public health crises should be coordinated, as appropriate, through the NSC's coordination mechanisms. For example, coordinating availability and access to medical countermeasures, medical personnel, and laboratory specimens for national health security purposes should be balanced with the international assistance that U.S. may need to provide both to contain an outbreak before it reaches our borders or for humanitarian reasons. In particular, the existence and available supply of medical countermeasures is a key issue in considering the risks associated with an outbreak and the response.

- **Standardized Clinical Care:** Standardized clinical care must be informed by evidence. In the context of an emerging infectious disease threat, early clinical research will be critical to inform understanding of the pathophysiology and optimal clinical management to inform clinical care guidelines. In an international incident, U.S. departments and agencies will need to work with the host government and its Ministry of Health, WHO, and implementation partners on the consistent application of standardized clinical care guidance/protocols, once developed and adopted to various settings and through NGO, government, and UN partners. As expeditious clinical research on medical countermeasure advances, clinical care guidelines will need to be revisited.

Not for Public Distribution

CHAPTER II – PLAYBOOK:

DECISION-MAKING RUBRICS FOR RESPONSE TO INTERNATIONAL AND DOMESTIC EMERGING INFECTIOUS DISEASE THREATS

I. International Playbook: Decision-Making Rubric for Assessment and Response

1. **Background:** Based on lessons learned from the 2014 Ebola outbreak and heightened monitoring of the MERS-CoV and Zika outbreaks that have followed, this international assistance and response checklist has been developed to identify key questions, U.S. Government interagency partners, and decisions to guide possible response measures in the event of a large scale infectious disease outbreak in a country(ies) with unmet public health capacity needs. The following Rubric lays out proposed initial interagency response steps, timelines, and key issues for consideration/decision, recognizing that each outbreak and country situation is different and departments and agencies have different capacities and presence on the ground. For example, CDC and USAID may already have a standing presence on the ground, allowing them to engage prior to a larger outbreak.

   The Rubric is intended to focus on emerging infectious disease threats that would result in an immediate and vigorous public health response including, but are not limited to, novel (non-seasonal) influenza viruses when first discovered in circulation, Severe Acute Respiratory Syndrome (SARS) and other novel coronaviruses, smallpox (Variola) virus, wild-type poliovirus infectious outside of the current endemic areas. Those conditions, as well as infections caused by filoviruses, flaviviruses, or any microorganism determined to have significant potential to impact national health security and/or spread internationally are notifiable under Articles 6 or 7 of the International Health Regulations (IHR). Additionally, this Rubric would apply to novel pathogens and pathogens with high rates of morbidity, mortality and/or transmissibility.

   This Rubric is not intended to serve as a comprehensive concept of operations or replace national or pre-existing U.S. Government response structures, but rather to serve as a proposed guide based on existing authorities, guidance, and response frameworks for staff monitoring emerging infectious disease threats and interagency planning and response, should the need arise in the future. This document is divided into two sections: key questions that provide the foundation for analytic work and key decisions and response options in accordance with the epidemiologic rating.

   This Rubric is not intended to supplant other existing guidance such as the U.S. Government international disaster response system, United States Government International Chemical, Biological, Radiological, and Nuclear Response (ICBRNR) Protocol)[1] and the United States Government Policy Framework for Responding to International Requests for

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[1] The ICBRNR Protocol provides principles, guidance and considerations for a U.S. Government response to a catastrophic, international CBRN incident. The protocol is designed to support, not supplant, existing U.S. Government coordination processes by adding CBRN-specific considerations including unique U.S. Government assistance and advisory options. It will also be used only when no other CBRN-related guidance is available or normal government to government support procedures cannot be applied (such as during war or when international response plans and agreements exist.)

Public Health and Medical Assistance during an Influenza Pandemic (PI Framework, see Appendix B)[2] or those of the World Health Organization and the Global Outbreak Alert & Response Network (GOARN). Users are encouraged to refer to these existing documents, as applicable.

2. **Assumptions:** This Rubric is based on the following key assumptions:

- The U.S. Government has the mandate and capacity to support outbreak and epidemic response in other countries through different departments and agencies. This Rubric is based on the existing legal authorities and mandates of the Departments and Agencies that would be involved in assistance and response efforts overseas. As such, the following departments and agencies should be consulted in an interagency process: DOS, USAID, HHS (in particular CDC, OGA, NIH, and other HHS components as needed), DOD, USDA, EPA, and DHS. A full description of department and agency roles begins on page 43. The National Security Council staff will provide the interagency forum and will recommend improvements to the existing mechanisms in place for a U.S. Government response to an epidemic and coordinate the policy aspects of the U.S. Government response as necessary.
- Each evolving epidemic threat will be different and will be evaluated along four dimensions of risk: (1) epidemiological indicators; (2) humanitarian/development/public health impact indicators; (3) security and political stability indicators; (4) and its transmission/outbreak/potential for public concern in the United States.
- Subject to overarching Chief of Mission[3] authority, the department or agency leading the response may differ based on the nature and phase of the outbreak or epidemic threat. Assessment teams should include expertise in infectious diseases, clinical research, epidemiology, humanitarian response, and other as needed. For example, the initial evaluation of an outbreak and provision of technical assistance may be through CDC with support from USAID, NIH, and/or DOD. A worsening outbreak may require the Chief of Mission to declare a disaster and mobilize OFDA resources to support response efforts and broader second-order humanitarian impacts through the deployment of a DART, specifically staffed for an epidemiologic response and which integrates USAID and CDC into a single incident

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[2] The PI Framework outlines the interagency process by which the U.S. Government will receive, consider, communicate about, decide upon, and respond to international requests for public health and medical assistance during influenza pandemics. The PI Framework does not apply to routine seasonal influenza activities.

[3] By statute and the President's Letter of Instruction to COMs, the COM has full responsibility for the direction, coordination, and supervision of all U.S. executive branch employees in his or her country, regardless of their employment categories or location, except those under the command of a Geographic Combatant Commander (GCC), on the staff of an international organization, or Voice of America correspondents on assignment. With these exceptions, the COM is in charge of all executive branch activities and operations in his or her country. Agencies and employees under COM authority must keep the COM fully informed of all current and planned activities and comply with all applicable COM policies and directives. In addition, the COM and the GCC must keep each other currently and fully informed and cooperate on all matters of mutual interest.

command structure under the DART team leader. Additional DOD, HHS, and CDC resources can be brought to support response efforts through the DART's civilian incident/operational command. A worsening epidemic threat in the middle of a complex emergency or conflict situation may require a different incident command structure.

- U.S. Government epidemic threat assessments, offers of assistance, and response will be coordinated with the host government, WHO, UN humanitarian response actors, and other countries. Nevertheless, the U.S. Government will make independent assessments of the epidemic threat and response options, along the four tiers noted below.

For each section of the following decision-making rubrics, "Key Questions" are followed by "Key Decisions." The Key Questions are intended to be asked, including of the departments and agencies listed, in order to inform the Key Decisions that can be made and actions that can be taken.

1a. Normal Ops: No unusual infectious disease outbreaks. Departments and Agencies are monitoring per usual systems.		
1b. Elevated Threat: Infectious disease outbreak with high mortality or morbidity/clinical severity/public health consequences, high transmission or outbreak potential; case reports/cluster of high consequence infectious disease with limited countermeasures; case reports/ cluster of novel pathogen		
Key Questions* **For each section of the rubric, Key Questions are followed by Key Decisions. The Key Questions are intended to be asked, including of the departments and agencies listed, in order to determine decisions that can be made and actions that can be taken*	**Department/Agency Responsibility**	**Notes**
Epidemiology and Country Context • What are the disease characteristics, i.e., severity, transmission potential? • What is known about the current epidemiology, i.e., index case, cases, contacts? • Does the host country have local diagnostic capability, contact tracing capability? • Does the host country have capability to prevent, rapidly treat, and deliver medical interventions?	• **HHS (CDC, ASPR, NIH, plus others), USAID, STATE, USDA**	Note: The epidemiologic analysis and country context is important to gauge the severity of the outbreak, host country capacity to respond and whether there are known evidence-based public health interventions. NOTE: DOD's Armed Forces Health Surveillance Center and National Center for Medical Intelligence also answers these questions specifically for DOD

• Does the host country have in place the plans and capacity to implement non-pharmaceutical interventions and public health recommendations? • Does the host country have communications capability to the international community through IHR channels? • Does the host country have internal risk communications capability to effectively implement public health recommendations?		
Public Health Infrastructure • How strong is the host country's public health infrastructure? • Has the host country undergone a Joint External Evaluation and are the results available? • Does the host country have the capacity to conduct a research agenda? • How strong is the country's risk communication capability	• **HHS (CDC, NIH, ASPR, plus others), USAID, STATE, USDA**	Note: This analysis provides information on the strength and capacity of the host country's public health system. The JEE, if completed, will provide insight on specific areas of weakness that may need to be shored up through external assistance.
Intent • Is there evidence of deliberative intent?	• **IC, DHS, State, HHS, DOD**	Note: Evidence of intent will trigger additional investigation, response, and attribution processes led by #CT and #WMD-T and require strong coordination and input from IC, DOD, State, FBI, and DHS
Specimen Sharing • Do we have access to/are we able to share among U.S. Government partners biological samples for purposes of risk assessment, research, MCM R&D, etc.	• **HHS (ASPR, CDC, and others)**	Note: Specimen sharing is critical to accelerate the development of needed countermeasures i.e. diagnostics, vaccines, and therapeutics
WHO and other regional partners • What is the WHO, host country, and/or regional capacity to coordinate an operational response? • Is there another donor nation or regional organization (e.g. GOARN, AUD, APEC, OAS, etc.) that has a leading role in any response due to the relationship with the host country's government?	• **State, USAID, HHS (CDC, ASPR, plus others)**	Note: WHO country offices will often play a leadership and advisor role to Ministries of Health in an outbreak. It is important to note that WHO's coordination capacity and leadership across countries varies greatly and can impact the speed of outbreak response.
U.S. Bilateral Relationships • How strong are the U.S. Government and other bilateral diplomatic relationships? • Is there a USAID, CDC, USDA, HHS, or DOD presence on the ground, with appropriate authorities, and who is best positioned to be a technical interlocutor with Ministry of Health?	• **STATE, USAID, HHS (CDC, ASPR, OGA), DOD, USDA**	Note: U.S. government relationship with the host government will impact the US ability to provide assistance, obtain important public health data, and/or cooperate on outbreak issues.

• What additional Ministries should the U.S. Government maintain close engagement with?		
Protection of U.S. Persons and Forces Overseas • Are there U.S. Persons/Forces who are cases or contacts? • Are there U.S. Persons/Force health protection concerns? • What is the plan to care for U.S. civilians in the affected host country? Military personnel and other U.S. Government representatives? When might medevac/repatriation be considered?	• **STATE, DOD, DOL, HHS CDC, ASPR, and others)**	Note: DOD and State may make different assessments with respect to public health measures for U.S. forces versus U.S. persons, including Embassy staff. While it is optimal that DOD and State harmonize public health measures for both U.S. forces and U.S. persons overseas, there may be legitimate extenuating circumstances that lead DOD to take stricter quarantine and isolation measures for U.S. forces.
Border Screening • Can the disease be effectively screened in travelers as a means to stop transmission? • Is the disease/outbreak amenable to screening? Are there overt observable signs of illness? • What is the geographical distribution of cases from the outbreak? If the outbreak covers a large area, then there are often not enough control points to implement effective border measures. If the outbreak is in a region that has a large volume of travel, then screening all travelers from that region becomes operationally difficult, if not impossible • Are travel or screening and monitoring requirements either globally or at U.S. borders, appropriate and would those measures stop the spread of disease	• **HHS (including CDC, ASPR), DHS, DOL, DOT, and State**	Note: The issue of border screening is complex and requires legal and operational consultations and a public health determination on its value as a tool to slow the spread of diseases vis a vis harm to travel, trade, and ability to mount a response within affected region. It is rarely appropriate to put border screening measures in place at an elevated threat level. There needs to be close coordination with appropriate NSC staff and DHS on these issues.

Key Decisions* **For each section of the rubric, Key Questions are followed by Key Decisions. The Key Decisions are intended to be informed by the Key Questions listed above.*	**Department/Agency Responsibility**	**Notes**
• Sub-IPC/IPC to recommend overall posture: Monitor, Conduct Deeper Assessment; or Offer Technical Assistance (Advisory) • Determine joint reporting structure and frequency of situation reports	• **Sub-IPC/IPC** • **Sub-IPC/IPC**	Note: We recommend regular re-assessment or these decisions at the sub-IPC/IPC level based on the evolving situation.

• Determine the need for and coordination of U.S. Government offers of technical advice/assistance • Determine whether to issue travel/ health advisory • Determine the need for higher level engagement on research and development of countermeasures • Determine the risk communication strategy (this should be included in the travel/health advisory decision)	• **STATE, USAID, HHS (CDC, OGA, NIH, ASPR and others), USDA** • **STATE and CDC** • **HHS (NIH, CDC, ASPR/BARDA, OPP, FDA)** • **STATE**	

1c. Credible Threat: Infectious disease outbreak with high mortality/clinical severity/high transmission; infectious disease outbreak with limited countermeasures; novel pathogen; community transmission; rate of transmission is higher than average rates/number of cases above prior outbreak thresholds; case imported to the U.S. regardless of evidence of community transmission.

Key Questions	Department/Agency Responsibility	Notes
Epidemiology and Country Context • What is the rate of transmission and projections for number of cases? • Is the disease exhibiting different characteristics in terms of rate of transmission, clinical severity, etc.? • What is our level of confidence on the case detection rate? • Is the host government being transparent with data sharing? • What is WHO's assessment? • What is U.S. Government's assessment of WHO (or regional agencies) leadership in the host country? • If relevant, what is the robustness of contact tracing? • Is diagnostic capacity keeping up? • What is our assessment of the strength of control measures? • Is the public health infrastructure keeping up with the cases? Future assessment of capacity, based on epi projection?	• **HHS (CDC, NIH plus others), USAID, STATE, USDA**	Note: These questions are intended to build on the questions that were raised in the previous phase. At this phase, regular communication and exchange of information through sub-IPC, IPC or interagency synch process is recommended Note: The epidemiologic analysis and country context is important to gauge the severity of the outbreak, host country capacity to respond and whether there are known evidence-based public health interventions. Note: DOD's AFHSB and NCMI also answer these questions specifically for DOD

Public Health Infrastructure • How strong is the host country's public health infrastructure? • Has the host country undergone a Joint External Evaluation and are the results available? • Does the host country have the capacity to conduct a research agenda?	• **HHS (CDC, ASPR, plus others), USAID, STATE, USDA**	Note: This analysis provides information on the strength and capacity of the host country's public health system. The JEE, if completed, will provide insight on specific areas of weakness that may need to be shored up through external assistance.
Development and Humanitarian Impacts • What is the potential for secondary impacts i.e. food security due to quarantines, orphans, etc.? • What is the host country's government communication capability and public's reaction to date?	• **USAID, STATE, HHS (CDC and others)**	Note: This analysis is critical to assess secondary humanitarian, development, and economic impacts that may emerge from a growing public health crisis including: trade, migration, loss of life, livelihood, famine, and orphans/vulnerable children
Countermeasures and Clinical Care • Is clinical guidance available and agreed to among the experts, including in low resource settings? • Is quality clinical care available that is appropriate to standards of care in the existing setting? • Is it scalable from within the region, if number of cases grow? i.e. number of clinical staff, number of beds, with additional surge capacity. In addition, triage capacity at the level of health facilities needs to be assessed as this can potentially lead to nosocomial infections. • Are there surge mechanisms in place for supply chain to accommodate additional cases? • Are there countermeasures, such as treatments, or vaccines currently available or under development? If so, would the affected country have access to them or would need US support? • What U.S. sponsored research and development efforts are underway? • Should efforts be accelerated?	• **HHS (CDC, NIH, ASPR/BARDA, OPP, FDA), USAID, DOD, USDA**	Note: This analysis is critical to inform the medical clinical response, protection of health care workers, deployment of medical countermeasures and options to stem the outbreak, loss of life and other clinical effects.
Protection of U.S. Persons and Forces Overseas • Are there U.S. Persons/Forces who are cases or contacts? • Are there U.S. Persons/Force health protection concerns? • What is the plan to care for U.S. civilians in the affected country? Military personnel and other U.S. Government representatives?	• **STATE/DOD/(HHS including CDC, ASPR and others)**	Note: DOD and State may make different assessments with respect to public health measures for U.S. forces versus U.S. persons, including Embassy staff. While it is optimal that DOD and State harmonize public health measures for both U.S. forces and U.S. persons

When might medevac/ repatriation be considered? U.S. persons or forces?		overseas, we note in the past, there were legitimate extenuating circumstances which led DOD to take stricter quarantine and isolation measures for U.S. forces.
Political/Security Analysis • What is the overall assessment of the host country's government handling of the situation? • Are there any political or security overlays or implications?	• **STATE/IC/DOD**	Note: This analysis is important to assess the current and potential impact a growing public health crisis could have on political and regional security and stability. A government's mishandling of the public health crisis and rising panic could lead to instability or insecurity.
U.S. Government Assistance • Is the cooperation and information sharing between the host country's government and US interlocutors strong? • Has a disaster declaration been issued? • Is there openness to accepting international and/or U.S. assistance?	• **STATE/USAID/HHS (including CDC, OGA, others)**	Note: U.S. Government relationship with the host government will impact the US ability to provide assistance, obtain important public health data, and/or cooperate on outbreak issues. Depending on the severity of the outbreak and secondary impact, the Chief of Mission could issue a Disaster Declaration to formerly trigger USAID's Office of Foreign Disasters funding and response mechanisms.
Border Screening • Can the disease be effectively screened in travelers as a means to stop transmission? • Is the disease/outbreak amenable to screening? Are there overt observable signs of illness? • What is the geographical distribution of cases from the outbreak? If the outbreak covers a large area, then there are often not enough control points to implement effective border measures. If the outbreak is in a region that has a large volume of travel, then screening all travelers from that region becomes operationally difficult, if not impossible • Are travel or screening and monitoring requirements either globally or at U.S. borders, appropriate and would those measures stop the spread of disease	• **HHS (including CDC, ASPR), DHS, DOL, DOT, and State**	Note: The issue of border screening is complex and requires extensive and operational consultations and a public health determination on its value as a tool to slow the spread of diseases vis a vis harm to travel, trade, and ability to mount a response within affected region. There needs to be close coordination with #TRANSBORDER and DHS on these issues.

Key Decisions	Department/Agency Responsibility	Notes
• Sub-IPC/IPC to advise on overall posture: Monitor, Conduct Deeper Assessment; or Offer Assistance	• **Sub IPC/IPC**	Note: We recommend regular re-assessment of these decisions at the sub-IPC/IPC level based on the evolving situation.
• Determine joint reporting structure and frequency of situation reports	• **Sub IPC/IPC**	
• Determine the need for and coordination of U.S. Government offers of technical advice/assistance.	• **Sub IPC/IPC**	
• Determine the strength of the international response, assistance from WHO, or other UN agencies, regional organizations, humanitarian systems, or other major donors.	• **IPC/DC**	Note: Important to assess whether WHO is providing strong leadership and press for early engagement from the international response community.

• Should the U.S. Government conduct an on the ground situation assessment or use existing data/reports?
  • Which Agencies should be involved—CDC, USAID/OFDA, DOD Humanitarian Assistance Support Team?
  • Is the environment hostile or non-permissive?
	• **State COM/Sub IPC/IPC**	Note: Chief of Mission would need to secure host government permission to freely move around country. Decision should be made quickly and assessment team ready to go within few days. In a non-permissive environment, the US would need to rely more heavily on UN partners.

• Determine a full spectrum of U.S. response options and assets based on the current and potentially worsening scenarios.	• **Sub IPC/IPC**	Note: We recommend developing response options for worsening situations as soon as possible given the unpredictability and speed of evolving epidemics.
• Is there sufficient funding for the response? What are funding options?	• **OMB/HHS/STATE/USAID/ DC/PC/POTUS**	Note: We recommend early budget and financial analysis of various response scenarios and an early decision to request supplemental funding from Congress, if needed.

• Should a Disaster Declaration and DART deployment be considered at this stage?
  • If yes, then what are the key lines of effort and capabilities?
  • If no, what are the triggers and thresholds for activating?
  • What support is being contemplated by the UN, WHO, key allies and like-minded countries?
  • Has UN OCHA determined triggers for activation?
	• **State COM/USAID OFDA/IPC/DC**	Note: Foreign assistance package development should be simultaneous and informed by assessment team in real time, if there is one. Decision should be made rapidly and concurrently as assessment team is deployed and foreign assistance package is being developed.

• Should the U.S. begin high-level consultations on an appropriate international response?	• **IPC/DC**	Note: Discussions could occur at WHO, through GHSI, other venues.
• Should there be changes in Travel/ health advisory issuance?	• **State/HHS/CDC**	
• Should there be arrangements for medevac or in-country clinical care advisory for U.S. Persons?	• **STATE/HHS (NIH, CDC, ASPR, BARDA, FDA)**	
• Should there be high level engagement on research and development of countermeasures?	• **HHS (ASPR, NIH, CDC, FDA)**	
• Is a Public Readiness and Emergency Preparedness (PREP) Act declaration needed to support countermeasure development?	• **HHS (ASPR, HHS, NIH, CDC, FDA)**	
• If: the U.S. has potential countermeasures in Strategic National Stockpile (SNS), or is in the process of developing countermeasures, should any be donated in response efforts?	• **HHS (ASPR, CDC, OGA), PC**	Note: In considering deployment of SNS assets, deploying internationally in early stages may slow or prevent biological threats from reaching U.S. borders. Additionally, international needs/donations should be considered in early discussions and decisions regarding medical countermeasure research and development
• Determine whether to implement screening and monitoring measures, or other travel measures within the U.S. or press for measures globally	• **HHS (ASPR, CDC, OGA), PC, POTUS**	

2a. Public Health Emergency of International Concern (PHEIC) or PHEIC-equivalent: An official WHO declaration of Public Health Emergency of International Concern. The term Public Health Emergency of International Concern is defined in the IHR (2005) as "an extraordinary event which is determined, as provided in these Regulations: to constitute a public health risk to other States through the international spread of disease; and to potentially require a coordinated international response". This definition implies a situation that: is serious, unusual or unexpected; carries implications for public health beyond the affected State's national border; and may require immediate international action. We recommend continuous evaluation and adjustment to the response based on whether the PHEIC is improving or worsening.

Key Questions	Department/Agency Responsibility	Notes
Epidemiology and Country Context • What is the rate of transmission and projections for number of cases? • Is the disease exhibiting different characteristics in terms of rate of transmission, clinical severity, etc.? • What is our level of confidence on the case detection rate? • Is the host country's government being transparent with data sharing? • What is WHO and/or OCHA's assessment? • What is U.S. Government's assessment of OCHA and WHO leadership at the regional and host country level? • If relevant, what is the robustness of contact tracing? • Is diagnostic capacity keeping up? • What is our assessment of the strength of the host country's control measures? • Has the disease spread to other countries?	• **HHS (CDC, NIH, plus others), USAID, STATE, USDA**	Note: These questions are intended to build on and revisit the questions that were raised in the previous phase. At this phase, regular communication and exchange of information through sub-IPC or IPC interagency synch process is recommended; in addition to regular meetings at the Deputies level to provide guidance to Departments and Agencies and continuously evaluate the effectiveness of the response. Note: The epidemiologic analysis and country context is likely to be dynamic and change. We recommend continuous reevaluation of the epidemiology to inform changes in US response options.
Public Health Infrastructure • Is the host country's public health infrastructure overwhelmed? Assessment of future capacity, based on epi projection?	• **HHS (CDC, ASPR, plus others), USAID, STATE, USDA**	Note: The host country's public health infrastructure requires continuous reevaluation of the epidemiology to ensure that diagnostic and medical care capacity is keeping up with the needs.
Humanitarian and Development Impacts • What is the potential for secondary impacts i.e. food security due to quarantines, orphans, etc.?	• **USAID, STATE**	Note: The humanitarian impact is likely to change and worsen as the public health crisis worsens. The U.S. should assess the need to layer in other humanitarian interventions

• What is the host country's government communication capability and public's reaction to date?		(food; water, sanitation, and hygiene; shelter) and whether to press for activation of the UN OCHA cluster system.
Countermeasures and Clinical Care • Is clinical guidance available and agreed to among the experts, including in low resource settings? • Is quality clinical care available in the existing setting? • Is clinical care capacity scalable, if number of cases grow? • Is it scalable from within the region, if number of cases grow? i.e. number of clinical staff, number of beds, with additional surge capacity. In addition, triage capacity at the level of health facilities needs to be assessed as this can potentially lead to nosocomial infections. • Are there surge mechanisms in place for supply chain to accommodate additional cases? • Are countermeasures or vaccines currently available or under development? • What US sponsored research and development efforts are underway? • Should efforts be accelerated?	• **HHS (ASPR,NIH,CDC,FDA), DOD, USAID**	Note: This analysis is critical to inform whether the medical clinical response needs augmentation or protocols need adjustment to improve clinical outcomes. There may also be a need to prioritize deployment of countermeasures based on supplies and accelerate research and development.
Protection of U.S. Persons and Forces Overseas • Are there U.S. Persons/Forces who are cases or contacts? • Are there U.S. Persons/Force health protection concerns? • What is the plan to care for U.S. civilians in the affected country? Military personnel and other U.S. Government representatives? When might medevac/repatriation be considered? • U.S. persons or forces?	• **STATE, DOD, DOL, HHS**	Note: DOD and State may make different assessments with respect to public health measures for US forces versus U.S. persons, including Embassy staff. While it is optimal that DOD and State harmonize public health measures for both U.S. forces and U.S. persons overseas, there may be legitimate extenuating circumstances that lead DOD to take stricter quarantine and isolation measures for U.S. forces.
Political/Security Analysis • What is the overall assessment of the host country's government handling of the situation? • Are there any political or security overlays or implications?	• **STATE/IC/DOD**	Note: This analysis requires continued updating and assessment of evolving security risks. A government's mishandling of the public health crisis and rising panic could lead to instability or insecurity.

U.S. Government Assistance • Is the cooperation and information sharing between the host country's government and US interlocutors strong? • Has a disaster declaration been issued? • Is there openness to accepting international and/or US assistance? • Is WHO or UNOCHA coordinating the response? What role do regional agencies (e.g., PAHO) have at this stage? • What partners/allies do we press for assistance? • Are there legal issues with the host country's government that need to be addressed with respect to provision of assistance?	• **STATE, USAID, HHS (CDC, ASPR, OGA, others)**	Note: U.S. Government relationship with the host government will impact the US ability to provide assistance, obtain important public health data, and/or cooperate on outbreak issues. Depending on the severity of the outbreak and secondary impact, the Chief of Mission could issue a Disaster Declaration to formerly trigger USAID's Office of Foreign Disasters funding and response mechanisms
Embassy Security • What is the Embassy's overall security and operating posture i.e. authorized departures, ordered departures, advisories to US citizens, other security concerns?	• **STATE**	
Border Screening • Can the disease be effectively screened in travelers as a means to stop transmission? • Is the disease/outbreak amenable to screening? Are there overt observable signs of illness? • What is the geographical distribution of cases from the outbreak? If the outbreak covers a large area, then there are often not enough control points to implement effective border measures. If the outbreak is in a region that has a large volume of travel, then screening all travelers from that region becomes operationally difficult, if not impossible • Are travel or screening and monitoring requirements either globally or at U.S. borders, appropriate and would those measures stop the spread of disease	• **HHS (including CDC, ASPR), DHS, DOL, DOT, and State**	Note: The issue of border screening is complex and requires legal and operational consultations and a public health determination on its value as a tool to slow the spread of diseases vis a vis harm to travel, trade, and ability to mount a response within affected region. There needs to be close coordination with #TRANSBORDER and DHS on these issues.
Key Decisions	**Department/Agency Responsibility**	**Notes**
• Sub-IPC/IPC to advise on overall posture: Monitor; Offer Ass stance; Mount Response	• **Sub-IPC/IPC**	Note: We recommend regular re-assessment of these decisions at the DC level based on the evolving situation.

• Determine whether existing international and/or U.S. technical assistance efforts making a difference in the trajectory of the disease and if changes are needed.	• **Sub-IPC/IPC/DC**	Note: Foreign assistance package development should be simultaneous and informed by assessment team in real time, if there is one.
• Should a Disaster Declaration and USAID/OFDA DART deployment be considered at this stage? ◦ If yes, then what are the key lines of effort and capabilities among Agencies? ◦ If no, what are the triggers and thresholds for activating? ◦ What support is being contemplated by the UN, WHO, key allies and like-minded countries? ◦ Has UN OCHA determined triggers for activation?	• **State COM/USAID OFDA/IPC/DC**	Decision should be made rapidly and concurrently as assessment team is deployed and assistance package is being developed. If there is a determination that an Epi-DART deployment not needed, then triggers/threshold for mobilization should be identified as part of the DART mobilization decision, based on severity
• Should there be a military deployment in support of a civilian DART response?	• **DOD/USAID/STATE/DC/PC/POTUS**	Note: This option presumes that the response is primarily operated through USAID and humanitarian response community, with select limited support through DOD. As the situation warrants, especially if country health system is overwhelmed. Need to consider impacts on U.S. personnel and needs in the U.S.
• Should the U.S. Government provide direct patient care through Public Health Service (PHS) Commissioned Corp or DOD capabilities?	• **HHS/DOD/DC/PC/POTUS**	Note: This option may be considered as the situation warrants, especially if country health system is overwhelmed. Need to consider impacts on U.S. personnel and needs in the U.S. and will involve legal negotiations through State/L with host country on licensing of U.S. Government medical personnel. [1] Additionally, DOD's medical capability to respond to a disease outbreak is limited and untested in the field, whereas the PHS did successfully operate an Ebola Treatment Unit in Monrovia. DOD's medical system is primarily designed to triage and evacuate the sick and injured, and DOD
• Should the U.S. Government deploy the PHS Commissioned Corps or other public health and medical teams in support of public health efforts and response?	• **HHS/DC/PC/POTUS**	

		currently has little deployable medical capability to respond to an infectious disease outbreak in another country, as our deployable capability is primarily designed for kinetic injuries.
• Is there sufficient funding for the response? What are funding options?	• **OMB/HHS/STATE/USAID/ DC/PC/POTUS**	Note: We recommend early budget and financial analysis of various response scenarios and an early decision to request supplemental funding from Congress, if needed.
• Determine travel/ health advisory issuance	• **CDC and State**	
• Determine whether to implement screening and monitoring measures, or other travel measures within the US or press for measures globally	• **DC/PC/POTUS**	
• Determine CONOP to medevac or provide in country clinical care advisory for U.S. Persons	• **STATE/HHS (including NIH, CDC, ASPR/BARDA, FDA)**	
• Should the U.S. mount an aggressive international diplomacy campaign to ensure the response efforts are resourced?	• **IPC/DC/PC**	Note: We recommend early high level U.S. diplomacy and requests for meaningful engagement of other countries, United Nations organizations, and multilateral institutions in order to alleviate pressure on US assets and resources and rapidly contain outbreaks before other part of the world are impacted.
• Should there be high level engagement on research (including non-clinical) and development of countermeasures	• **HHS (ASPR/HHS/NIH/CDC/FDA) USAID**	

• Is a PREP Act declaration needed to support countermeasure/vaccine development?	• **HHS -- ASPR/HHS/NIH/CDC/FDA**	
• Is interagency coordination of public, diplomatic, and legislative communications necessary?	• **DC/PC**	
• If PHEIC is in a conflict zone where the U.S. is not already militarily engaged, should DOD be engaged in the public health response under the auspices of a lead federal agency? [4]	• **PC/NSC/POTUS**	Note: This is a complex, difficult decision and careful consideration is needed before committing the U.S. military assets in a conflict zone where the U.S. is not already militarily engaged. In particular, the decision needs consider if the risk of the disease spreading to the U.S. outweigh the security risk to U.S. personnel? What are the legal authorities for the U.S. to engage in conflict settings? Has U.S. military engagement been requested by a legitimate local authority? What are the political implications of military action?
• If: PHEIC is in a conflict zone where the U.S. is militarily engaged, should DOD be asked to assist with response activities in support of the Lead Federal Agency (See footnote 4)?	• **PC/NSC/POTUS**	Note: Under present authorities, DOD would be able to provide a broad spectrum of support to a response, in support of a Lead Federal Agency (i.e. USAID). Among other factors, policy makers will need to consider the impact of this support on COCOM operations vis a vis risks posed by the spread of the disease.

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[4] In this and the next two instances, we assume that DOD would be managing the majority of the operational response under the auspices of lead federal agency such as USAID. USAID has the delegated authority for foreign disaster assistance per E.O. 12163. Per DOD Directive 5100.46, DOD shall respond to foreign disasters in support of the U.S. Agency for International Development (USAID) pursuant to E.O. 12163 and section 2292(b) of title 22, U.S.C. In emergency situations in order to save human lives, where there is not sufficient time to seek the prior initial concurrence of the Secretary of State, in which case the Secretary of Defense shall advise, and seek the concurrence of, the Secretary of State as soon as practicable thereafter per E.O. 12966. DOD response under these circumstances is limited to 72 hours unless concurrence from the Secretary of State is received.

• If: in country and civilian response capabilities are completely overwhelmed with rapid airborne transmission spreading to multiple countries, should DOD support the epidemiologic response, as required, under the auspices of a Lead Federal Agency i.e. USAID (See footnote 4)?	• **PC/NSC/POTUS**	
• If: the U.S. has potential countermeasures in Strategic National Stockpile (SNS), or is in the process of developing countermeasures, should any be donated in response efforts	• **HHS (ASPR, CDC, OGA), PC, POTUS**	Note: In considering deployment of SNS assets, it may be that deploying internationally in early stages may slow or prevent biological threats from reaching U.S. borders. Additionally, international needs/donations should be considered in early discussions and decisions regarding medical countermeasure research and development

II. Domestic Playbook: Decision-Making Rubric for Assessment and Response

Assumptions:

The following assumptions will apply to an early response to a high-consequence emerging infectious disease threat in the United States:

- Early in the emergence of an emerging infectious disease threat, either within or outside the United States, there will be more that is unknown than what is known. Decision-makers will choose courses of action with incomplete information.

- The U.S. Government will use all powers at its disposal to prevent, slow, or mitigate the spread of an emerging infectious disease threat by:
    1) Limiting spread of disease;
    2) Mitigating the impact of illness, suffering, and death; and
    3) Sustaining critical infrastructure and key resources in the United States.

- The NSC will serve as an information conduit for the Executive Office of the President (EOP) and will coordinate interagency policy discussions and decisions.

- While States hold significant power and responsibility related to public health response outside of a declared Public Health Emergency, the American public will look to the U.S. Government for action when multi-state or other significant public health events occur.

- An emerging infectious disease threat could be the result of natural emergence, accident, or intentional act of terrorism. An early Federal response may include efforts to discern the cause and take appropriate action if the pathogen is found to have not emerged from nature.

1a. Normal Operations: No specific threat of a pandemic. Departments and Agencies are monitoring per usual systems.

1b. Elevated Threat: Identification of a human case of a pathogen of pandemic potential (PPP) anywhere.

Key Questions* **For each section of the rubric, Key Questions are followed by Key Decisions. The Key Questions are intended to be asked, including of the departments and agencies listed, in order to determine decisions that can be made and actions that can be taken*	**Department/Agency Responsible**	**Notes**
Epidemiology and Locality Context • What are the disease characteristics (i.e., severity, transmission potential) and current domestic availability of MCM, and non-pharmaceutical interventions (NPI)? • Is the threat potential imminent or more a long-term threat? What is known about the current epidemiology (i.e. index cases, case contacts)? • Are there clear public health or medical recommendations for prevention, treatment or other intervention sufficient to prevent an outbreak? • Does the State, Local, Territorial, or Tribal (SLTT) jurisdiction have internal and external communication strategies and capabilities to effectively implement public service messaging? • Does the SLTT jurisdiction have diagnostic capability and capacity sufficient to trace and monitor for an outbreak? • Does the SLTT jurisdiction have in place the plans, capability, and capacity to implement MCM or NPI sufficient to prevent an outbreak? • Is the disease treatable locally or does it need treatment requiring transport of patients to a specialty treatment facility? • Will infectious waste disposal require Comprehensive Environmental Response, Compensation, and Liability Act offsite disposal and/or come under Hazardous material regulations?	• HHS • FEMA • EPA	HHS is the lead federal department/agency (LFA) for domestic *health response* and coordinates all other federal departments and agencies through a unified coordination structure scalable to the event. FBI would be the LFA for law enforcement *crisis management response*. Evidence of intent will trigger additional processes and involve NSC, IC, DOD, State, FBI, DHS, and HHS. Refer to the BIA for specific interagency coordination. The *health response* and law enforcement *crisis management response* should occur synchronously. Refer to Planning Guidance for the Handling of Solid Waste Contaminated with a Category A Infectious Disease Substance

• Are there chemical or physical tools and infrastructure sufficient to interrupt or impede transmission?		
Intent • Is there evidence of deliberate intent?	• FBI	

Key Decisions* **For each section of the rubric, Key Questions are followed by Key Decisions. The Key Decisions are intended to be informed by the Key Questions listed above.*	**Department/Agency Responsible**	**Notes**
• Provide federal support to SLTT preparation where gaps exist. • Determine the need for research and development or procurement of medical and non-MCM. • Plan and prepare for federal action should threat become credible. • Develop communication strategies and identify a trusted credible authority as spokesperson. • Tailor waste management plans to incident specific conditions.	• HHS • FBI • DOT • EPA	Refer to Planning Guidance for the Handling of Solid Waste Contaminated with a Category A Infectious Disease Substance

1c. Credible Threat: Confirmation of multiple human cases of a PPP anywhere OR determination of a significant potential for a Public Health Emergency (PHE).

Key Questions	**Department/Agency Responsible**	**Notes**
Epidemiology • What is the rate of transmission and projection for number of cases? • Is the disease exhibiting different characteristics in terms of rate of transmission, clinical severity, etc.? • Is appropriate active surveillance underway and what is our level of confidence on the case detection rate? • Are there immediate risks to the public that must be addressed or immediate actions that must take place to contain the cases?	• HHS (CDC, plus others), USDA	These questions are intended to build on the questions that were raised in the previous phase. At this phase, regular communication and exchange of information through sub-IPC, IPC or interagency synch process such as the Biological Incident Notification and Assessment (BINA) Protocol is recommended

• To what extent has quarantine and isolation been implemented by local medical and public health authorities? • What is the robustness of contact tracing? • Is diagnostic capacity keeping up, and are the results available in a timely manner? • What is our assessment of the strength of control measures? • Is the public health infrastructure keeping up with the cases? Future assessment of capacity, based on epidemiologic projection? • Is there specific concern for federal workforce safety? • Is this pathogen susceptible to detection by screening travelers?		
Countermeasures and Clinical Care • Is clinical guidance available and agreed to among the experts, including in low resource settings? • Is clinical care available at an appropriate standards of care in the existing setting? • Is clinical care scalable from within the region, if number of cases grow? • Are there countermeasures, such as treatments, or vaccines currently available or under development? • What research and development efforts are underway? • Should efforts be accelerated?	• HHS (including CDC, NIH, ASPR/BARDA, FDA), DOD, USDA	
Political/Security Analysis • What is the overall assessment of the SLTT government's handling of the situation? • Are there any political or security overlays or implications?	• HHS, DHS • Sub-IPC	
U.S. Government Assistance • Has a disaster declaration been considered? If not, what are the triggers? • Is there a need to coordinate response beyond local capability? • Is there a need for a United Coordination Group and if so, at what level and where to physically locate it?	• HHS, DHS	Declaration of Stafford Emergency or PHE allows funding and response and recovery resources from the Fed Gov.

Key Decisions	Department/Agency Responsible	Notes
- Biological Incident Notification and Assessment (BINA) Protocol to engage the interagency for awareness - Sub-IPC/IPC to recommend overall posture: monitors, conduct deeper assessment; or offer technical assistance (advisory) - Determine reporting structure and frequency of situation reports - Determine the need for and coordination of federal advice/assistance. - Establish the formal structure of the UCG once determination is made to stand one up or what the triggers will be to stand one up. - Determine funding sources for a response. What are funding options? - Consider a PHE at this stage. ○ If yes, identify the key lines of effort and capabilities the PHE will address. ○ If no, identify the triggers and thresholds for activating. ○ Identify all support being contemplated by the U.S. Government? - Consider implementation of travel restrictions and border controls. - Consider the potential for changes in Travel/ health advisory issuance. - Engage on research, development, increased production of MCM or NPI if necessary. - Determine whether a PREP Act declaration needed to support MCM development.	- Sub-IPC/IPC - HHS - DOT	Depending on the nature and predicted evolution of the threat, this could easily demand a review at the Deputies level or above.

2a. Initial Response-Activation, Situational Assessment, and Movement: Demonstration of efficient and sustained human-to-human transmission of a novel or re-emerging PPP anywhere OR Declaration of a PHE.

Key Questions	Department/Agency Responsible	Notes
Incident Detection and Threat Characterization • What is the rate of transmission and projections for number of cases? • Is the disease exhibiting different characteristics in terms of rate of transmission, clinical severity, etc.? • What is our level of confidence on the case detection rate? • Is the SLTT Government being transparent with data sharing? • What is the robustness of contact tracing? • Is diagnostic capacity keeping up?	• HHS • Sub-IPC	All previous questions should be revisited at each of these response phases (2 a,b,c) in addition to those that follow. In a rapidly evolving incident, all subsequent questions and decisions may be on the table early.
Communications • What is the SLTT government's communication capability and public's reaction to date? • Is U.S. Government coordinating risk communication to develop a unified message across a range of media? • What are key Federal messages? • Who should act as the key Federal spokesperson for the response?	• HHS (ASPA), DHS (JIC) • Sub-IPC	Early coordination of risk communications through a single federal spokesperson is critical to collect and disseminate data elements from across SLTT and federal agencies.
Controlling the Spread/Epidemic • Has the disease spread to other localities? • What is our assessment of the strength of control measures? • Is the SLTT public health infrastructure overwhelmed? Assessment of future capacity, based on epi projection? • Is this going to be a Stafford Act incident (Pres)? Public Health Emergency (HHS)? Both?	• HHS/FEMA • Sub-IPC	Stafford Act Incident: Participant Agencies provide support to NRF and NDRF elements (JFO, NOC, etc). FEMA is primary for federal operations although may not be LFA. Non-Stafford Act Incident: must establish alternate legal authorities of each participant for provided support activities. Support between agencies is governed by Economy Act.

Key Decisions	Department/Agency Responsible	Notes
• Determine the need for public health support personnel, teams, etc. • Determine the need for diagnostic personnel teams and resources. • Determine patient movement needs and methodology between designated facilities, locations, and jurisdiction. • Prepare public messaging and steps the public should take to protect itself. Unify messaging with SLTT. • Coordination of workforce protection activities, including threat messaging; PPE determination, procurement and deployment; compliance with OSHA requirements; development and dissemination of worker safety and health guidance (OSHA and National Institute for Occupational Safety and Health (NIOSH)); identification and clarification of workplace policies and flexibilities (Office of Personnel Management, Equal Employment Opportunity Commission). • Determine regulatory approaches to facilitate MCM or NPI in the event they are needed. Emergency Use Authorizations (EUA) if novel.	• IPC/DC • HHS, DHS, DOL/OSHA, NIOSH	Unified coordination (UCG) at the federal level, HHS REC coordinates with FEMA Regional Administrator

2b. Employment of Resources and Stabilization: Increasing number of cases in the United States or healthcare system burden that exceeds State, Local, Territorial, or Tribal (SLTT) resources OR SLTT request of assistance.

Key Questions	Department/Agency Responsible	Notes

• Is there sufficient funding for the response? What are funding options?
• Should a Disaster Declaration be considered at this stage?
  • If yes, then what are the key lines of effort and capabilities?
  • If no, what are the triggers and thresholds for activating?
  • What federal support is being contemplated?
	• HHS/DHS
	• IPC/DC
		National-level UCG established with a Federal Health Coordinating Officer designated for affected states

Key Decisions	Department/Agency Responsible	Notes
• Determine whether to implement screening and monitoring measures, or other travel measures within the US or globally. • Determine whether Strategic National Stockpile (SNS) resources are necessary • Prioritization and allocation of resources subject to the Defense Production Act (DPA) • Determine need for EUA • Determine need for private sector funding and methods to establish new MCM • Determine need for medical providers • Determine need for mortuary services	• IPC/DC • HHS • DOT	

2c. Intermediate Operations: Cases continue to climb with long-term service disruption and critical infrastructure impact OR Presidential Stafford Act Declaration OR SLTT request for assistance.

Key Questions	Department/Agency Responsible	Notes
Mass Care and Human Services • Does local SLTT authority need assistance to implement mass care activities such as shelter, commodity distribution or medical services? • Is the incident likely to impact housing such that alternate housing needs may become necessary? • Are there voluntary organizations that can be integrated into response?	• HHS, DHS • IPC/DC	
Augment and Surge Public Health and Medical Services • Should the U.S. Government deploy the PHS Commissioned Corps or other public health and medical teams in support of public health efforts and response?	• HHS • IPC/DC/PC	
Political/Security Analysis • What is the overall assessment of the government's handling of the situation? • Are there any political or security overlays or implications?	• IPC/DC	

Border Screening • Can the disease be effectively screened in travelers as a means to stop transmission? • Are travel or screening and monitoring requirements either globally or at U.S. borders, appropriate and would those measures stop the spread of disease?	• HHS, DHS, DOS, DOL, DOT	The issue of border screening is very complex and requires extensive legal consultations and a public health determination on its value as a tool to slow the spread of diseases vis a vis harm to travel, trade, and ability to mount a response within affected region. There needs to be close coordination with #TRANSBORDER and DHS on these issues.
Key Decisions	**Department/Agency Responsible**	**Notes**
• IPC to advise on overall posture: Monitor; Offer Assistance; Mount Response • Determine travel/ health advisory issuance • Determine whether to implement screening and monitoring measures, or other travel measures within the US or press for measures globally. • Is interagency coordination of public, diplomatic, and legislative communications necessary?	• IPC/DC/PC	
3a. Sustained Operations: Long-term recovery operations with or without continued incidence of new cases.		
Key Questions	**Department/Agency Responsible**	**Notes**
• Protect, Augment, and Return Federal and SLTT Essential Services • Support SLTT officials in decision-making and implementation of relocation, alternative housing, and re-occupancy strategies. Large displaced populations will need to be linked integrally to remediation planning. • What are the key services and critical infrastructure that need to come back online for society to return to normal? • What Federal programs can be leveraged to assist with recovery?	• IPC/DC/PC	

Key Decisions	Department/Agency Responsible	Notes
- Emergency supplemental for recovery? - National prioritization for recovery (i.e. infrastructure and schools).	- IPC/DC/PC	

CHAPTER III – APPENDICES

APPENDIX

I. Declarations and Mitigation Options

DECLARATIONS

There are a variety of declarations that enable the use of different governmental response authorities and activities. Described below are declarations and their authorities that would likely be considered early in a response to a pathogen with the potential to cause an epidemic emergency or a pandemic.

WHO Declaration of Public Health Emergency of International Concern (PHEIC) ***(WHO Director General)***

A PHEIC is declared in response to an extraordinary event that is determined to constitute a public health risk through the international spread of disease, potentially requiring a coordinated international response. A PHEIC would trigger release of emergency "temporary" recommendations by the WHO regarding travel, surveillance, infection control, and medical care to affected or other countries.

Public Health Emergency (PHE) ***(HHS Secretary)***

Under Section 319 of the Public Health Service Act, the HHS Secretary may determine that a disease or disorder presents a public health emergency or that a public health emergency, including significant outbreaks of infectious disease or bioterrorist attacks, otherwise exists. A declaration lasts for the duration of the emergency or for 90 days, and can be extended. As amended under the Pandemic and All Hazards Preparedness Reauthorization Act, a PHE enables HHS to access "no year" funds, and allows for various exemptions and waivers to facilitate response activities, including certain restrictions on requirements for medical countermeasure distribution, some Select Agent requirements. It also allows the Secretary, upon request by a governor or tribal organization, to authorize the temporary reassignment of state and local public health department or agency personnel funded in whole or in part through programs authorized under the Public Health Service Act for the purpose of immediately addressing a federally declared public health emergency.

Presidential Declaration of a National Emergency ***(POTUS)***

The National Emergencies Act, Section 201, authorizes the President to declare a national emergency. Under Section 301, The President must specify the provisions of the law under which the President or other officials will act before statutory emergency authorities can be exercised. A declaration under the National Emergencies Act triggers emergency authorities contained in other statutes.

*Robert T. Stafford Disaster Relief and Emergency Assistance Act (**POTUS**)*

The President may declare an emergency under the Stafford Act (42 USC Chapter 68) when Federal assistance is needed to supplement State and local efforts and capabilities to save lives, protect property, and preserve public health and safety. The President can also declare an emergency without a gubernatorial request if primary responsibility for response rests with the Federal Government because the emergency involves a subject area for which the United States exercises exclusive responsibility and authority. This authority is less likely to be used during a health-related emergency, but FEMA has provided guidance under what conditions it could be used to enable State response efforts in an influenza pandemic.

Social Security Act Section 1135

Under Section 1135 of the Social Security Act the HHS Secretary is authorized to temporarily modify or waive certain Medicare, Medicaid, State Children's Health Insurance (SCHIP) programs, and waive some Health Insurance Portability and Accountability Act requirements in order to ensure sufficient healthcare services for those enrolled in SSA programs during an emergency. Section 1135 waivers require a declaration of national emergency or disaster by the POTUS under the National Emergencies Act or Stafford Act and a Public Health Emergency determination by the HHS Secretary.

PHARMACEUTICAL/MEDICAL MITIGATION OPTIONS

Depending on the pathogen and its primary mode of transmission, there may be a series of early decisions, led by HHS, related to MCM – vaccines, drugs and other therapies to treat and prevent disease. Given that information about the nature and spread of the disease may not be readily available, these decisions may need to be made in an uncertain environment characterized by the absence of concrete and reliable information.

Key questions:

- Are there ways (such as diagnostic devices) to detect this pathogen/disease?
- What medical materiel are necessary to treat this disease?
- What supplies are needed to protect healthcare workers, others who may be in contact with patients?
- How will we address requests for international sharing of MCM?

Are there licensed vaccines available for this threat?

If YES: Is there vaccine held in Federal stockpiles?

If NO: Should the United States initiate purchase of vaccine?

If NO: Are there vaccines in investigational stages of development?

If YES: Should investigational vaccines be pursued for potential use?

Are there approved drugs or other treatment options available?

If YES: Are there treatment options held in Federal stockpiles?

If NO: Should the United States purchase available drugs?
If YES: Are the treatment options available in the quantity needed?

If NO: are there treatment options in investigational stages of development?

If YES: Should investigational treatment options be pursued for potential use?

Is there sufficient personal protective equipment for healthcare workers who are providing medical care?

If YES: What are the triggers to signal exhaustion of supplies? Are additional supplies available?

If NO: Should the Strategic National Stockpile release PPE to States?

NON- PHARMACEUTICAL INTERVENTIONS

Travel-related Interventions

There are a series of potential travel-related interventions to slow or stop the spread of an emerging disease to the United States, including.

a. Working with affected countries to place restrictions on travelers exiting the impacted country(ies);
b. Working with transit countries to place restrictions on travelers coming to the United States from an affected country;
c. Providing health-related guidance to travelers entering the United States;
d. Issuing security directives or emergency amendments to place restrictions on flights entering or operating in the United States;
e. Support for the country of outbreak in containing the pathogen
f. Restricting the arrival of conveyances or individuals from affected country(ies);
g. Screening for illness at ports of entry and monitoring of potentially exposed persons; and
h. Measures such as health guidance, isolating ill passengers and/or placing exposed passengers under quarantine to limit onward disease transmission.
i. Redirection and consolidation of resources as necessary.

Key Questions:

What is the scope of the travelling population of concern?

a) What is the volume of inbound airline passenger traffic per day, by airport of arrival, via direct and indirect travel? (DHS/CBP)
b) Are nationals of the affected country subject to visa requirements, or do they travel Visa Waiver? (State)
c) What is the size and makeup of the U.S.-persons population in the affected country? (State & DOD)

Can the host country identify the infected and trace their contacts?

If YES:

a) Can and will the host country quarantine and isolate effectively? (HHS/CDC)
b) Can and will the host country implement effective "do not board" orders for those identified? (State & DHS)
c) Will the host country share the DNB data with the U.S. Government? (State & DHS)

If NO:

a) Are there readily detectable signs/symptoms for which we can screen? (HHS)
b) Can a population be determined for screening? (DHS, HHS/CDC, & State)
c) Can they be funneled? (DHS & DOT)

Options other than screening:

a) United States Government- generated "do not board" lists
b) Issuance of Security Directives (domestic carriers)
c) Issuance of Emergency Amendments (foreign carriers)

COMMUNITY MITIGATION MEASURES

Non-pharmaceutical measures are critical components of early response to an emerging epidemic or pandemic. They work best when complementing pharmaceutical interventions such as the provision of vaccines and drugs, but may be the only intervention possible when pharmaceutical options are not available. Community mitigation measures can include:

a. Voluntary home isolation of the ill and home quarantine of the exposed
b. Dismissal of students from schools
c. Social distancing measures, such as telework
d. Cancellation of large public gatherings; and
e. Widespread use of personal protective devices

II. Key Departments and Agencies:

i. International

This Rubric is based on the existing legal authorities and mandates of the Departments and Agencies that would be involved in assistance and response efforts overseas. As such, the following Departments and Agencies should be consulted in an interagency process:

- **The Department of State**: State will retain Chief of Mission authority and may facilitate requests of assistance from the host government, issue disaster declarations, and maintain high level communications.
    - **The Department of State (Embassies)**: State supports Embassy operations under Chief of Mission authority[5] in affected countries to: facilitate requests of assistance from the host government as well as encouraging host government to take effective and medically sound response measures; maintain liaison with international organizations, other donor countries, and NGOs working in the response; issue disaster declarations in consultation with USAID; maintain secure, high-level communications; provide the logistics and administrative support for U.S. personnel arriving to assist; and provide big-picture reporting on events in country.
    - **The Department of State (Headquarters)**: State reaches out to other donor countries and organization to understand existing commitments and, where appropriate, encourage additional or new commitments of resources for a response; ensures other U.S. agencies participating in the response are coordinating with Embassy and other responders, and that they have any needed bilateral agreements required for the response with host countries; communicates with other countries on matters important to response such as overflight rights, medical evacuation and treatment options; and works with HHS on diplomatic engagement with WHO, health ministers, and similar offices and officials etc.

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[5] By statute and the President's Letter of Instruction to COMs, the COM has full responsibility for the direction, coordination, and supervision of all U.S. executive branch employees in his or her country, regardless of their employment categories or location, except those under the command of a Geographic Combatant Commander (GCC), on the staff of an international organization, or Voice of America correspondents on assignment. With these exceptions, the COM is in charge of all executive branch activities and operations in his or her country. Agencies and employees under COM authority must keep the COM fully informed of all current and planned activities and comply with all applicable COM policies and directives. In addition, the COM and the GCC must keep each other currently and fully informed and cooperate on all matters of mutual interest.

- **The United States Agency for International Development (USAID)**: USAID's Bureau for Global Health (USAID/GH) and USAID/OFDA's ongoing health, development and disaster risk reduction programs in developing countries may provide a platform for support at the request of the host government. In the event of a humanitarian emergency, USAID/OFDA coordinates operational response efforts among U.S government actors, serves as the interlocutor with the international humanitarian system, and engages with other humanitarian donors regarding resource support. USAID/OFDA will provide support to assess the humanitarian aspects of an evolving epidemic threat and may be activated to provide varying degrees of response support (case management, coordination, logistics and social mobilization) in the event of large scale public health emergency. USAID/OFDA maintains engagement in humanitarian global health networks and the international humanitarian architecture; and can also leverage partners' experience, including the UN Office for the Coordination of Humanitarian Affairs (OCHA), which coordinates UN agencies involved in humanitarian response, and international NGOs that provide medical and health services. USAID/OFDA, CDC, and DOD have existing interagency agreements that cover joint operations, exchanges of technical advisors, staff and liaison officers, and cross trainings. USAID/GH's ongoing health and development programs in developing countries may provide a platform for support at the request of the host government. Additionally, USAID/GH and USAID/OFDA, in coordination with HHS, can support diplomatic engagements with WHO. In the event of an epidemic reaching humanitarian scale, USAID/OFDA can also support U.S. Government coordination with WHO through engagements with the Health Cluster.

  USAID maintains substantial operational and technical capacities to lead overseas disaster responses, including interagency partnerships, planning, programming, logistics, sectoral expertise, and coordination. These capabilities can be mobilized toward a public health crisis when the situation occurs amidst a wider humanitarian emergency, or the health crisis constitutes a disaster in its own right. When crises require a large scale operational response, USAID deploys a Disaster Assistance Response Team (DART) to coordinate the U.S. Government interagency response. The DART is an adaptable, scalable and flexible response and coordination structure, linking major roles, responsibilities and actions of the U.S. Government efforts to those of the broader international humanitarian system to ensure interoperability. USAID/OFDA's long-standing interagency agreements and partnerships are critical in mobilizing specialized and unique capabilities from across the U.S. Government onto the DART.

- **The Department of Health and Human Services (HHS)**: HHS Operating and Staff Divisions (including CDC, NIH, FDA, OASH/USPHS, OGA, and ASPR) can provide support in the following areas: technical and diplomatic engagement with, and in support of, the World Health Organization, engagement and information exchange with Ministries of Health and other government officials through existing bilateral relationships, the IHR (2005) National Focal Point and other critical bilateral and multilateral international partnerships, alignment of domestic public health emergency preparedness and response efforts, including research response, with the international response efforts (including the provision of international assistance), participating or leading bilateral or multilateral epidemiologic and/or public health response efforts, making countermeasures available, including through research and development efforts, and mobilization/deployment HHS medical and public health assets, as necessary, including HHS MCM and HHS public health and medical personnel such as the Public Health Service Commissioned Corps or National Disaster Medical System, if needed. Specific operating and staff divisions contributions include:

- **The U.S. Centers for Disease Control and Prevention (CDC)**: Through its existing relationships CDC may facilitate requests for assistance from the host government. CDC will provide epidemiological expertise and technical assistance on disease outbreaks and control at the request of the host government. Because of CDC's role in the international community, CDC will likely be the first agency engaged and its technical leadership will need to be maintained to ensure the efficiency and efficacy of the U.S. Government response. In the capacity of outbreak response, in direct coordination with the respective Ministry of Health this could include but not be limited to activation of CDC's Emergency Operations Center, deployment of Global Rapid Response Teams, development or improvement in surveillance including laboratory capacity and distribution of diagnostics through the Laboratory Response Network and other networks, training in and performing of contact tracing, determination of risk factors, assistance in quarantine criteria, support in development of microplans for immunization activities.

- **The HHS Office of the Assistant Secretary for Preparedness and Response (HHS/ASPR)**: Provides leadership in international programs, initiatives, and policies that deal with public health and medical emergency preparedness and response.[6] HHS/ASPR manages the HHS Secretary's Operation Center and the U.S. International Health Regulations (IHR) (2005) National Focal Point (NFP). The NFP manages the U.S. assessment and notification process for domestic potential public health emergencies of international concern (PHEIC) as well as other emergency communications, including CBRN events, and the sharing of routine public health with the World Health Organization and other IHR NFPs worldwide. In addition, HHS/ASPR provides leadership for HHS activities during the U.S. CBRN response to an affected nation in close coordination with other U.S. Government agencies. HHS/ASPR's Biomedical Advanced Research and Development Authority (BARDA) can rapidly respond to accelerate development of medical and non-MCM, in collaboration with the National Institutes of Health (NIH) and DOD through the Public Health Emergency MCM Enterprise (PHEMCE). ASPR, in collaboration with the CDC and in coordination with the Secretary of Homeland Security, exercises the responsibilities and authorities of the HHS Secretary with respect to coordination of the Strategic National Stockpile (SNS), and along with CDC, NIH, FDA and OGA, advice on the international deployment of

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[6] 42 U.S.C. 300hh-11(b)(6).

SNS assets.[7] ASPR has deployment authority for Federal (non-DOD) medical personnel (including the National Disaster Medical System (NDMS), and along with OGA and CDC, makes recommendations on the international deployment of HHS public health and medical personnel.[8] ASPR, along with CDC and stakeholders across HHS and the rest of the U.S. Government, also coordinates U.S. Government efforts to identify, obtain and coordinate distribution of samples of influenza and non-influenza pathogens with the potential to cause a public health emergency both domestically or internationally.[9] In response to an international event, ASPR capabilities that may support coordinating U.S. Government response efforts that include Mass Disaster Response (Direct Medical Care, Patient Evacuation Support, and Mass Fatality Management); Protect Responder/Worker Safety and Health; CBRN Public Health and Medical Consultation, Technical Assistance; and Health/Medical Equipment and Supplies (MCM including medical supplies, biologics, pharmaceuticals, blood products, vaccines and antitoxins).

- **The National Institutes of Health (NIH)**: NIH will serve as the lead agency for the U.S. biomedical research response. NIH, through its 27 institutes and centers, supports and conducts a comprehensive biomedical research program including basic science, preclinical studies, and clinical trials to improve public health. NIH sponsored and conducted research on emerging and re-emerging infectious diseases extends from the bench to the bedside, and facilitates the discovery and development of MCM including diagnostics, therapeutics, and vaccines to prevent, treat, and control diseases in the U.S. and globally. NIH collaborates with host countries, academia, industry, and other U.S. Government agencies, as well as with international research institutions and organizations, to respond to international public health emergencies. Working collaboratively, NIH will lead development and implementation of the U.S. Government research agenda, including development of MCM, based on Ebola lessons learned (*HHS Ebola Improvement Plan*). Working with State and OGA, NIH will also represent the United States in the global research response, both in multilateral and bilateral forums and with partner countries. NIH will also ensure that research synergizes with other response actions, in collaboration with USAID/OFDA, CDC, and others. The research agenda will reflect the following priorities:

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[7] *The Policy Framework for Responding to International Requests for Public Health Emergency Countermeasures from the U.S. Department of Health and Human Services* describes how the U.S. Government receives, considers, decides upon, and responds to international requests for the sharing of HHS public health emergency countermeasures, within existing legal and regulatory frameworks and current operational capabilities. As described in this document, there may be significant caveats to the ability of HHS to deploy these assets internationally under certain circumstances.

[8] HHS has developed internal policy documents which detail existing authorities and funding that HHS could use to deploy SNS assets and personnel. As described in these documents, there may be significant caveats to the ability of HHS to deploy these assets internationally under certain circumstances. *The Policy Framework for Responding to Requests for the International Deployment of Department of Health and Human Services Public Health and Medical Personnel* describes how HHS is to receive, analyze make decisions about, and respond to international requests for HHS public health and medical personnel during international medical and/or public health emergencies that warrant coordination among HHS offices and agencies and/or other U.S. Government departments and agencies.

[9] The DRAFT *United States Government Framework for the Rapid Sharing of Biological Material Related to Non-Influenza pathogens with the Potential to Cause a Public Health Emergency of International Concern* describes the process by which relevant Departments/Agencies within the U.S. Government jointly identify, obtain, and coordinate distribution of either domestic or international biological material related to non-influenza pathogens with the potential to cause a public health emergency.

identifying parameters of the health emergency, mitigating mortality and morbidity, ending the health emergency, and enhancing future emergency preparedness. NIH will work in close partnership with ASPR, ASPR/BARDA, FDA, CDC, DOD, and other agencies relevant in a particular emergency, such as USAID, USDA etc.

- ○ **The Food and Drug Administration (FDA)**: FDA can provide assistance by working closely with manufacturers and U.S. government partners to expedite the development and availability of biologics (including vaccines), drugs, and devices (including diagnostic tests and personal protective equipment). FDA provides ongoing technical support to the World Health Organization and may provide support to regulatory authorities of affected countries to streamline development and expedite export and availability of countermeasures.

- ○ **The Office of the Assistant Secretary for Health (OASH):** OASH oversees 12 core public health offices — including the Office of the Surgeon General and the U.S. Public Health Service Commissioned Corps — a unique and deployable asset that is one of the seven uniformed services of the United States. Responsibilities include the ASH serving by statute as the Director of the National Vaccine Program and setting vaccination policy, and as the Director of the National Blood Safety Program. OASH helps coordinate the Department's response (both domestically and internationally) utilizing its key leadership including the Regional Health Offices, the Surgeon General, and the Commissioned Corps. OASH works with ASPR to make recommendations on international and domestic deployments. The international Ebola response, in particular, placed heavy emphasis on deployment of the Corps as the only U.S. government asset providing direct patient care to those potentially afflicted with Ebola Virus Disease.

  - ○ **The HHS Office of Global Affairs (HHS/OGA)**: HHS/OGA serves as the primary point within HHS for setting priorities for international engagements and provides policy and diplomatic engagement, with, and in support of, WHO, engagement and information exchange with Ministries of Health and other government officials, and provide outreach on other critical bilateral and multilateral international partnerships.

- **The Department of Defense (DOD):** DOD can provide assistance and support response efforts, particularly relevant biosurveillance, biosecurity, mil-mil or mil-civ capacity building efforts, or relevant countermeasures research and development. Additional unique response capabilities can be provided if needed, such as logistics, transport, security, medical treatment when there are critical capacity gaps that cannot be easily filled by civilian actors. DOD also plays a key role in developing MCM, coordinated through the PHEMCE.

- **The U.S. Department of Agriculture (USDA):** USDA can support U.S. Government policy and diplomatic engagements with the World Organization for Animal Health (OIE) and/or the Food and Agriculture Organization (FAO) and, in coordination with Embassies, USDA can support engagements and information exchanges with Ministries of Agriculture and other government officials, especially to contribute to agricultural analyses and reporting on disease situations affecting the food and agriculture sector. Also, USDA has a mechanism to loan USDA experts to support the FAO Crisis Management Center – Animal Health's responses to animal disease emergencies in developing countries that request assistance. In addition, USDA, in concert with FDA, has an obligation to protect the domestic food supply, and would continue to monitor imports of food and food products to ensure their safety. USDA can also lead the U.S. research response to zoonotic diseases where the source of infection includes livestock and poultry. Working collaboratively with DOS, DOD, DHS, and NIH, USDA can lead the development and implementation of a U.S. Government agricultural research agenda, such as development of veterinary MCM and vector control to prevent and control the spread of vector-borne and zoonotic diseases in animal reservoirs. Working with international research institutions and global alliances, USDA can establish strategic research collaborations to help developing countries control and prevent diseases at the source. A research agenda could reflect priorities such as understanding the ecology of infectious diseases, preventing disease outbreaks, developing diagnostics and vaccines fit for purpose, and enhancing disease control programs.

- **The Department of Homeland Security (DHS):** DHS leads United States Government activities related to global health threats at U.S. borders and ports of entry, in conjunction with HHS, DOS, and USDA. Additionally, the National Biosurveillance Integration Center (NBIC), housed within the DHS Office of Health Affairs, provides shared situational awareness and enables early warning of emerging infectious diseases and acute biological events (both international and domestic) through collaboration with federal partners. NBIC provides regular biosurveillance updates and spot reports to federal, state, and local decision-makers.

- **The Department of Transportation (DOT):** Responsible for the safe and efficient movement of people and goods in transportation, including the operation of the National Air Space. Under the Hazardous Material Regulations ensures the safe movement of hazardous materials, including pathogens capable of causing disease, in transportation.

ii. Domestic: See Appendix 6 of the Biological Incident Annex, also pasted below

Organization	Resource Name	Description
USDA	Animal and Plant Health Inspection Service (APHIS)	Provides technical assistance and assists in coordinating with nonprofit and private organizations and government departments or agencies to support the rescue, care, shelter, and essential needs of owners and their household pets and service and assistance animals. Depending on the incident type, APHIS will coordinate with HHS, EPA, USACE, and/or FEMA to provide technical advice regarding disposal of animal carcasses.
USDA	Disaster Supplemental Nutrition Assistance Program (D-SNAP)	Through the D-SNAP, Food and Nutrition Services is able to quickly offer short-term food assistance benefits to families suffering in the wake of a disaster. Through D-SNAP, affected households use a simplified application. D-SNAP benefits are issued to eligible applicants within 72 hours, speeding assistance to disaster survivors and reducing the administrative burden on state agencies operating in post-disaster conditions.
USDA	National Animal Health Laboratory Network (NAHLN)	NAHLN laboratories perform routine diagnostic tests for endemic animal diseases as well as targeted surveillance and response testing for foreign animal diseases, protecting human health by decreasing the risk of zoonotic diseases (those that can affect animals and humans).
USDA	National Veterinary Stockpile	~~When a veterinary response is required, assets may be requested from~~ the National Veterinary Stockpile, which is managed by USDA APHIS as a resource to address foreign animal disease in livestock and poultry.
DHS	BioWatch	BioWatch system consists of units that collect air samples in more than 30 cities and a network of local, state, and federal laboratories that analyze samples on a daily basis with a goal of providing warning of possible biological attacks within 12 to 36 hours of an agent's release. BioWatch has conducted 37 laboratory and 20 field audits to date. For more than 10 years, BioWatch has operated 24 hours a day, 365 days a year.
DHS	Domestic Communication Strategy	The Domestic Communication Strategy is a guidebook which provides options for public information strategies, complementing existing federal plans and strategic guidance documents, which may be employed in a domestic terrorist attack or a credible threat to the homeland.
DHS	Integrated Consortium of Laboratory Networks (ICLN)	ICLN provides for a federally coordinated and interoperable system of laboratory networks that provide timely, credible, and interpretable data in support of surveillance, early detection and effective consequence management for acts of terrorism and other major incidents requiring laboratory response capabilities. The ICLN is a partnership between nine federal agencies: Department of Defense (DOD), Department of Agriculture, Department of Energy, Department of Health and Human Services, Department of Homeland Security, Department of Interior, Department of Justice, Department of State, and Environmental Protection Agency. The ICLN includes the following networks: DOD Laboratory Network, Environmental Response Laboratory Network, Food Emergency Response Network, Laboratory Response Network, National Animal Health Laboratory Network, National Plant Diagnostic

Organization	Resource Name	Description
		Network, and the Veterinary Laboratory Investigation and Response Network.
DHS	National Bioforensic Analysis Center (NBFAC)	Conducts bioforensic analysis of evidence from a biocrime or terrorist attack to attain a "biological fingerprint" to help investigators identify perpetrators and determine the origin and method of attack. NBFAC is designated by Presidential Directive to be the lead federal facility to conduct and facilitate the technical forensic analysis and interpretation of materials recovered following a biological attack in support of the appropriate lead federal agency.
DHS	National Biological Threat Characterization Center	Conducts studies and laboratory experiments to fill in information gaps to better understand current and future biological threats, to assess vulnerabilities and conduct risk assessments, and to determine potential impacts to guide the development of countermeasures such as detectors, drugs, vaccines, and decontamination technologies.
DHS	National Biosurveillance Integration System (NBIC)	The mission of NBIC is to enhance the capability of the Federal Government to— • Rapidly identify, characterize, localize, and track a biological incident of national concern. • Integrate and analyze data relating to human health, animal, plant, food, water, and environmental domains. • Disseminate alerts and pertinent information. • Oversee development and operation of the National Biosurveillance Integration System interagency community.
DHS	Surge Capacity Force	DHS Surge Capacity Force is organized into four tiers, for the purpose of prioritizing and providing for an informed selection of deployable human assets: • Tier 1 – is comprised of FEMA Reservists with FEMA credentials. • Tier 2 – is comprised of FEMA Permanent Full-Time Employees with FEMA credentials. • Tier 3 – Is comprised of DHS full-time federal employees. • Tier 4 – Is comprised of full-time or part-time federal employees from other federal departments and agencies.
DHS (CBP Laboratories and Scientific Services)	Weapons of Mass Destruction Response Teams	Provides level "A" hazardous material technical response capabilities.
DHS (NPPD)	Sector Specific Agency – HHS has area of responsibility for Healthcare and Public Health	The Sector Outreach and Programs Division builds stakeholder capacity and enhances critical infrastructure security and resilience through voluntary partnerships that provide key tools, resources, and partnerships. The division operates the council and stakeholder engagement mechanisms for the critical infrastructure security and resilience community. The division also serves as the sector-specific agency for 6 of the 16 critical infrastructure sectors and collaborates with the other 10.
DHS (NPPD/Federal Protective Service)	Hazardous Response Program	This program Includes initial investigations of suspicious or threatening chemical, biological, radiological, nuclear, and explosive (CBRNE) incidents; conduction of CBRNE threat assessments; confirmations of unauthorized presence of CBRNE agents and materials; and the conduction of emergency operations. The Hazardous Response Program also provides evacuation support during CBRNE incidents, CBRNE mutual aid response through agreement and training assistance. The program is compliant with Occupational Safety and Health Administration and National Fire Protection Association guidance and regulations.

Organization	Resource Name	Description
DHS (FEMA)	Consequence Management Coordination Unit (CMCU)	In response to notification of a terrorist threat or actual incident, FEMA will activate the CMCU in support of FBI-led crisis management operations at the Weapons of Mass Destruction Strategic Group (WMDSG). Within the WMDSG, the FEMA staffs and manages the CMCU. This unit is also supported by federal technical capabilities provided through the DOE/NNSA, HHS, DOD, and DHS. As the principal advisory unit for consequence management considerations within the WMDSG, the CMCU provides recommended courses of action in light of ongoing and evolving operations. The CMCU provides a link between FBI-led crisis response and FEMA-coordinated consequence management response operations.
DHS (FEMA), DOJ (FBI), DOD, HHS, EPA	Domestic Emergency Support Team (DEST)	A rapidly deployable, interagency team responsible for providing expert advice and support to the FBI Special Agent in Charge concerning the Federal Government's capabilities in resolving a terrorist threat or incident.
DHS (FEMA)	National Ambulance Contract	The National Ambulance Contract is not to be used to transport contagious patients.
DHS (FEMA)	National – Incident Management Assistance Team (N-IMAT)	N-IMATs are trained on CBRN-related scenarios and will be FEMA's lead in the field to coordinate and integrate inter-jurisdictional response in support of the affected state(s) or U.S. territory(s). N-IMATs provide initial situational awareness for federal decision makers and support the initial establishment of a unified command. IMATs provide for multi-disciplinary needs of emergency management and may include members from the inter-agency community.
DHS (FEMA)	Interagency Modeling and Atmospheric Assessment Center (IMAAC)	The IMAAC provides a single point for the coordination and dissemination of federal atmospheric dispersion modeling and hazard prediction products that represent the federal position during actual or potential incidents involving hazardous material releases. Through plume modeling and analysis the IMAAC provides emergency responders and decision makers with predictions of hazards associated with atmospheric releases to aid in protecting the public and the environment.
DHS (USCG)	Marine Security Response Teams (MSRT)	MSRTs constitute the Coast Guard's Counter-Terrorism Advanced Interdiction force capable of executing higher risk law enforcement missions against opposed/hostile maritime threats including all CBRN threats. The MSRT is a quick response, ready assault force to conduct Short Notice Maritime Response operations. The MSRT is capable of interdicting, boarding, verifying CBRN and explosive threats, and when required, engaging in offensive operations against hostile threats.
DHS (USCG)	National Strike Force (NSF)	The NSF supports On Scene Coordinators, Lead Agency Incident Commanders, Operational Commanders, and Combatant Commanders with technical experts, specialized response equipment, and incident management skills to mitigate the effects of hazardous substance releases; oil discharges; and chemical, biological, radiological, and nuclear incidents. The NSF includes the National Strike Force Coordination Center; Atlantic, Gulf, and Pacific Strike Teams, Incident Management Assist Team, and Public Information Assist Team.
DOC (NOAA)	Air Resources Laboratory (ARL)	The ARL focuses its dispersion research on the development and improvement of sophisticated dispersion models and other tools for air quality and emergency response applications. This includes volcanic eruptions, forest fires, nuclear accidents, and homeland security incidents. ARL also designs and evaluates high resolution observing networks, develops instrumentation, and conducts tracer field studies to improve the accuracy of atmospheric transport and dispersion predictions.

Organization	Resource Name	Description
DOD	Military Aeromedical Evacuation (AE)	Patient movement by the DOD requires a request from a state or a federal department and the activation of the patient movement and definitive care components of the National Disaster Medical System (NDMS). Patient movement regulated by the Global Patient Movement Requirements Center (GPMRC) is conducted on fixed wing aircraft from an Aerial Port of Embarkation to an Aerial Port of Debarkation The AE Patient Movement functions are coordinated by the Global Patient Movement Requirements Center (GPMRC), a unit of the U.S. Transportation Command, at Scott Air Force Base, Illinois. The GPMRC will collect casualty information from the states and determine patients' clearance for flight. DOD then matches the patients' needs with the aircraft, medical crew on board, and h a destination facility (also known as "patient regulation"). States may move patients using civilian or National Guard assets to hospitals within the state (presumably based on a state emergency plan) without the involvement of GPMRC.
DOD	CBRN Response Enterprise	The CBRN Response Enterprise is composed of both Active Component (Title 10) Federal, and Reserve Component (Title 10) (Reserve Component Title 10 could include federalized National Guard forces) elements with the mission of providing focused lifesaving capabilities with increased responsiveness for Defense Support of Civil Authorities. National Guard CBRN Response Enterprise elements include WMD Civil Support Teams, CBRN Enhanced Response Force Packages, and Homeland Response Forces. National Guard forces that have not been ordered into a Title 10 status are under state Governor, not Secretary of Defense, command and control. The Defense CBRN Response Force, and two Command and Control CBRN response elements are composed of active duty, National Guard, and Reserve forces allocated to USNORTHCOM to respond in a Title 10 status.
DOD	Defense Intelligence Agency/National Center for Medical Intelligence (NCMI) (HPAC)	The National Center for Medical Intelligence provides intelligence assessments of foreign health threats, including pandemic warning, to prevent strategic surprise across the broad threat spectrum.
DHS (USCG)	Marine Security Response Teams (MSRT)	MSRTs constitute the Coast Guard's Counter-Terrorism Advanced Interdiction force capable of executing higher risk law enforcement missions against opposed/hostile maritime threats including all CBRN threats. The MSRT is a quick response, ready assault force to conduct Short Notice Maritime Response operations. The MSRT is capable of interdicting, boarding, verifying CBRN and explosive threats, and when required, engaging in offensive operations against hostile threats.
DOI/USGS	USGS Environmental Health	The USGS Environmental Health Mission Area has the capability to develop models and tools for identifying, monitoring and assessing emerging environmental health threats and pathways for human and animal exposure. These activities build upon USGS's expertise in the hydrologic, atmospheric, geologic, and ecologic processes that affect the transport and fate of agents in the environment.
DOI/USGS	The USGS Western Fisheries Research Center (WFRC)	WFRC conducts research and diagnostics on high consequence disease of wild fish species, including diseases that can spill over into and result in economic impacts to US aquaculture. WFRC serves as an Office of International Enforcement Reference Laboratory that provides international expertise on infectious hematopoietic necrosis (a viral disease) and bacterial kidney disease of fish.
DOI/FWS	The FWS Wildlife Health Office	The FWS W Wildlife Health Office Conducts critical work in wildlife health and disease surveillance, response, and management. The Wildlife Health office comprises a network of wildlife health experts located across the country supporting refuges, wetland management districts, and other service programs by (a) providing technical advice

Organization	Resource Name	Description
		about wildlife disease issues, (b) providing guidance on adapting management strategies to prevent wildlife diseases, (c) identifying health surveillance needs, (d) conducting research projects to determine best practices in disease prevention, (e) providing veterinary services for field activities, and (f) supporting emergency response efforts.
DOI/NPS	National Park Service (NPS) Wildlife Health Branch and Office of Public Health	The NPS Wildlife Health Branch provide professional veterinary consultation and technical assistance to aid parks in conserving wildlife, identifying and responding to zoonotic diseases in wildlife populations, and working closely with the NPS Office of Public Health and state and local health departments in zoonotic disease prevention and response. The NPS Office of Public Health is staffed by public health service officers including physicians, veterinarians, environmental health service officers and engineers that oversee food, drinking water, and wastewater safety in parks as well as assisting in zoonotic and vector-borne disease surveillance and responses in parks.
DOJ (FBI)	Hazardous Evidence Response Teams	These teams are FBI field teams trained, equipped, and authorized to collect CBRNE evidence in hazardous environments.
DOJ (FBI)	Weapons of Mass Destruction Strategic Group (WMDSG)	The WMDSG is an FBI-led interagency coordination mechanism to address the U.S. Government response to a terrorism incident involving radiological or nuclear threats to include the identification and deployment of specialized interagency elements used to support the Radiological Nuclear Search Operations in locating, identifying, and interdicting the threat.
EPA	CBRN Consequence Management Advisory Team	This team is the lead EPA special team for provision of scientific and technical support for all phases of environmental response to a CBRN incident, including health and safety, site characterization, environmental sampling and analysis, environmental monitoring, building, structure, and outdoor decontamination, waste treatment environmental cleanup, and clearance; manages the EPA's Airborne Spectral Photometric Environmental Collection Technology fixed-wing aircraft, which provides chemical/radiological data and deploys and operates mobile and fixed chemical and biological laboratories.
EPA,	Environmental Response Laboratory Network (ERLN)	ERLN provides capability to perform routine and emergency analysis of environmental samples. ERLN is integrated into the ICLN organization.
EPA	Environmental Response Team	This team Provides scientific and technical expertise for response to traditional chemicals and hazardous materials, including health and safety, environmental sampling, air monitoring, toxicology, risk assessment, waste treatment, contaminated water/scientific divers, and site decontamination and cleanup and provides field-analytical and real-time air monitoring for chemicals with the EPA mobile laboratories known as Trace Atmospheric Gas Analyzers.
EPA	National Criminal Enforcement Response Team	This team Provides technical, safety, hazardous evidence collection, and other forensic support to law enforcement in the instance of a WMD terrorist attack or environmental catastrophe.
EPA	National Response Team (NRT)	NRT is a national-level multi-agency coordination entity comprised of 15 federal agencies that provides technical assistance and resource and policy support to the federal On-Scene Coordinator during NCP and ESF #10 responses to oil and hazardous materials.

Organization	Resource Name	Description
EPA, DHS (USCG)	Regional Response Team (RRT)	RRTs are co-chaired by the EPA and USCG. A regional-level multi-agency coordination entity comprised of 15 federal agencies, state, and tribal representatives that provide technical assistance and resource support to the Federal On-Scene Coordinator during NCP and ESF #10 responses to oil and hazardous materials.
EPA, DHS (USCG)	On-Scene Coordinators (OSC)	OSCs coordinate the on-scene, tactical response to oil and hazardous substances incidents. Actions include assessment of the extent and nature of environmental contamination; assessment of environmental cleanup options; and implementation of environmental cleanup, including decontaminating buildings and structures and management of wastes. The EPA generally provides the federal OSC for incidents in inland areas, while the USCG provides the federal OSC for incidents in coastal areas.
HHS	Administration for Children and Families (ACF)	ACF promotes the self-sufficiency of individuals, families, and populations with access and functional needs prior to, during, and after disasters; Human Services Technical Assistance assets are utilized in the field to provide these services.
HHS	Aerial Ports of Embarkation	HHS National Disaster Medical System Teams provide critical care health care provider augmentation to federal transporters at aerial ports of embarkation to manage patients prior to flight.
HHS	Assistant Secretary for Preparedness and Response (ASPR)	ASPR leads the nation and its communities preparing for, responding to, and recovering from the adverse health effects of public health emergencies and disasters. ASPR focuses on preparedness, planning, response, and recovery; provides federal support, including medical professionals through ASPR's National Disaster Medical System, to augment state and local capabilities during an emergency or disaster; and leads the federal Health and Social Services RSF of the NDRF to assist locally led recovery efforts in the restoration of the public health, health care and social services networks of impacted communities.
HHS	Assistant Secretary for Public Affairs (ASPA)	The HHS ASPA assumes the lead in media response for public health, coordinated with and through the Joint Information Center. HHS ASPA coordinates the overall HHS Public Affairs planning, development, and implementation of emergency incident communications strategies and activities for the department.
HHS (ASPR)	At-Risk, Behavioral Health and Community Resilience	Provides subject matter expertise, education, and coordination to internal and external partners to ensure that the functional needs of at-risk individuals and behavioral health issues are integrated in the public health and medical emergency preparedness, response, and recovery activities of the nation to facilitate and promote community resilience and national health security.
HHS	Biomedical Advanced Research and Development Authority (BARDA)	BARDA, within the ASPR Office of HHS, provides an integrated, systematic approach to the development and purchase of the necessary vaccines, drugs, therapies, and diagnostic tools for public health medical emergencies.
HHS	Crisis Counseling Assistance and Training Program	This is a state grant program administered by HHS/Substance Abuse and Mental Health Services Administration and funded by the FEMA.
HHS	Disaster Medical Assistance Team (DMAT)	A DMAT is a group of professional and para-professional medical personnel (supported by a cadre of logistical and administrative staff) designed to provide medical care during a disaster or other incident. DMATs are designed to be a rapid-response element to supplement local medical care until other federal or contract resources can be mobilized, or the situation is resolved.

Organization	Resource Name	Description
HHS	Disaster Mortuary Operational Response Team (DMORT)	DMORTs are intermittent federal employees, each with a particular field of expertise, who are activated in the case of a disaster. The DMORTs are directed by ASPR/OEM/NDMS. Teams are composed of funeral directors, medical examiners, coroners, pathologists, forensic anthropologists, medical records technicians and transcribers, finger print specialists, forensic odonatologists, dental assistants, x-ray technicians, mental health specialists, computer professionals, administrative support staff, and security and investigative personnel.
HHS	Disaster Mortuary Operational Response Team-Weapons of Mass Destruction (DMORT-WMD)	The DMORT-WMD team is composed of intermittent federal employees from across the nation. The primary focus of DMORT-WMD is decontamination of bodies when death results from exposure to chemicals or radiation. DMORT-WMD is developing resources to respond to a mass disaster resulting from biological agents. However, this team might have difficulty in responding to such an incident if the deaths occur in multiple locations.
HHS	Disaster Portable Morgue Unit (DPMU)	DPMUs are staged at locations on the East and West coasts for immediate deployment in support of DMORT operations. The DPMU is a depository of equipment and supplies for deployment to a disaster site. It contains a complete morgue with designated workstations for each processing element and prepackaged equipment and supplies.
HHS	Emergency Management Group (EMG)	The EMG is a scalable team that is utilized every day at some operational level of intensity. Its organization is designed to be flexible and can expand as needed. The EMG is the established structure through which information and potential threats are received and decisions, including the deployment of an Incident Response Coordination Team, are made. The EMG operates within the principles of the Incident Command System and National Incident Management System. The EMG effectively operates 24/7 but can reach its full capacity with associated liaisons within four hours.
HHS	Federal Medical Station	Federal Medical Stations (FMSs) are modular and rapidly deployable, providing a platform for the care of displaced persons who have non-acute health-related needs that cannot be met in a shelter for the general population during an incident.
HHS	International Medical Surgical Response Team IMSuRT)	An IMSuRT comprises federal employees used on an intermittent basis to deploy to the site of a disaster or public health emergency and provide high quality, lifesaving surgical and critical care. IMSuRT-South is based in Miami-Fort Lauderdale-Palm Beach metropolitan area, IMSuRT-East is based in Boston, and IMSuRT-West is based in Seattle.
HHS	Incident Response Coordination Team (IRCT)	The IRCT and the IRCT-Forward act as the HHS agent's on-scene at emergency sites under the direction of the EMG. The IRCT directs and coordinates the activities of all HHS personnel deployed to the emergency site and assists state, local, tribal and other federal/government agencies as applicable.
HHS	Joint Patient Assessment and Tracking System Strike Team	This is a two-person strike team that will be deployed to aerial ports of embarkment, patient reception areas/casualty collection points, and destination locations to track patients through the system.
HHS	National Disaster Medical System (NDMS)	ASPR OEM NDMS provides deployable medical response teams to augment the nation's medical response capability and support SLTT authorities through three major missions: (1) provide emergency medical care support, (2) transport patients from the affected area to medical care locations remote from the affected areas, and (3) provide definitive medical care at NDMS civilian member hospitals.

Organization	Resource Name	Description
HHS	National Electronic Disease Surveillance System	This system facilitates electronically transferring public health surveillance data from the healthcare system to public health departments. It is a conduit for exchanging information that supports the National Notifiable Disaster Surveillance System.
HHS	National Institutes of Health (NIH)	NIH is made up of 27 different components called institutes and centers. Each has its own specific research agenda. All but three of these components receive their funding directly from Congress and administer their own budgets.
HHS	National Public Health Information Coalition	HHS will leverage a network of state and local health public health communicators to exchange information and increase the likelihood of consistent messaging and communication activities between federal and state or local governments regarding the emergency and its impact on health.
HHS	National Veterinary Response Team	This is a cadre of individuals within the NDMS who have professional expertise in areas of veterinary medicine, public health, and research. It is the primary federal resource for the treatment of injured or ill animals affected by disasters.
HHS	Regional Emergency Coordinators	ASPR's primary representatives throughout the country at the regional level; coordinates preparedness and response activities for public health and medical emergencies.
HHS	Secretary's Operations Center (SOC)	The SOC operates 24/7/365. The mission of the SOC is to serve as the focal point for synthesis of critical public health and medical information on behalf of the U.S. Government.
HHS (And Private Sector)	Certified Bio-Containment Units for Highly Infectious Diseases (Category A)	These include Emory University, Atlanta GA; Nebraska Medical Center, Omaha, NE; National Institutes of Health, Bethesda, MD; St. Patrick Hospital, Missoula, MT.
HHS (CDC)	CDC Emergency Operations Center (CDC-EOC)	The CDC EOC coordinates the deployment of CDC staff and the procurement and management of all equipment and supplies that CDC responders may need during their deployment. When activated for a response, the CDC EOC can accommodate up to 230 personnel per 8-hour shift to handle situations ranging from local interests to worldwide incidents.
HHS (CDC)	Epidemic Information Exchange (Epi-X)	CDC's secure, web-based communications network that serves as a powerful communications exchange between CDC, state and local health departments, poison control centers, and other public health professionals. The system provides rapid reporting, immediate notification, editorial support, and coordination of health investigations for public health professionals.
HHS (CDC)	Epidemic Intelligence Service (EIS) Officers	EIS officers work in many health departments in the United States or at the CDC through the CDC's Center of Surveillance, Epidemiology, and Laboratory Services and are dispatched to investigate possible epidemics, due to both natural and artificial causes, including *Bacillus anthracis* hantavirus West Nile virus, and the Ebola virus.
HHS (CDC)	Health Alert Network	CDC's primary method of sharing cleared information about urgent public health incidents with public information officers; federal, state, territorial, and local public health practitioners; clinicians; and public health laboratories.
HHS (CDC)	National Institute for Occupational Safety and Health (NIOSH)	NIOSH is the U.S. federal agency that conducts research and makes recommendations to prevent worker injury and illness. NIOSH can deploy a multidiscipline team to provide guidance and technical assistance on responder and worker safety and health.

Organization	Resource Name	Description
HHS (CDC)	Laboratory Response Network (LRN)	The LRN and its partners maintains an integrated national and international network of laboratories that are fully equipped to respond quickly to acts of chemical or biological threats, emerging infectious diseases, and other public health threats and emergencies.
HHS (CDC)	National Notifiable Disease Surveillance System (INNDSS)	NNDSS is a nationwide collaboration that enables all levels of public health—local, state, territorial, federal, and international—to share notifiable disease-related health information. Public health uses this information to monitor, control, and prevent the occurrence and spread of state-reportable and nationally notifiable infectious and noninfectious diseases and conditions. NNDSS is a multifaceted program that includes the surveillance system for collection, analysis, and sharing of health data. It also includes policies, laws, electronic messaging standards, people, partners, information systems, processes, and resources at the local, state, territorial, and national levels.
HHS (CDC)	Public Health Information Network	CDC's national initiative to increase the capacity of public health agencies to electronically exchange data and information across organizations and jurisdictions (e.g., clinical care to public health, public health to public health and public health to other federal agencies). To do so, the Network promotes the use of standards and defines functional and technical requirements for public health information exchange.
HHS (CDC/Agency for Toxic Substances and Disease Registry)	Rapid Response Registry Team	This survey instrument gives local and state entities a tool to register responders and other persons exposed to chemical, biological, or nuclear agents from a disaster. The survey instrument is a two-page form that can be distributed on paper or electronically. It can be implemented quickly to collect information rapidly to identify and locate victims and people displaced or affected by a disaster.
HHS (CDC)	Strategic National Stockpile (SNS) Push Packages	A SNS Push Packages is a cache of pharmaceuticals and medical supplies designed to provide rapid delivery of a broad array of assets for an undefined public health threat in the initial hours of an event. This cache is packed in cargo containers that can be delivered anywhere in the United States within 12 hours of the federal decision to deploy.
HHS (CDC)	Strategic National Stockpile: Managed Inventory (MI)	If the incident requires additional pharmaceuticals and/or medical supplies, follow-on MI supplies will be shipped to arrive within 24 to 36 hours. If the agent is well defined, VMI can be tailored to provide pharmaceuticals, supplies, and/or products specific to the suspected or confirmed agent(s). In this case, the VMI could act as the first option for immediate response from the SNS program.
HHS (FDA)	Regulated Products/Commodity Response Teams	Provides assistance to state and local health authorities or in the absence of state and local health investigators, assumes primary responsibility for evaluation and recovery of food service establishments and pharmacies.
HHS (FDA)	Medical Countermeasures Initiative (MCMi) Office of Counterterrorism and Emerging Threats (OCET)	This office coordinates FDA's medical countermeasures development, availability, preparedness, and response." with "This office leads an FDA-wide initiative to coordinate medical countermeasure development, preparedness and response. FDA ensures that medical countermeasures (MCMs)—including drugs, vaccines and diagnostic tests—to counter CBRN and emerging disease threats are safe, effective, and secure. This includes coordinating research, setting deployment and use strategies, and facilitating access to MCMs
HHS (USPHS)	Applied Public Health Team (APHT)	APHT provides resources and assistance to local health authorities throughout the United States. Currently five APHTs, each of which is a work force comprising 47 USPHS-trained Commissioned Corps officer responders. Yet each APHT is scalable and capable of providing only those resources needed. Each APHT is also responsive; as a Tier 2 team the APHT can deploy within 36 hours of activation.

Organization	Resource Name	Description
HHS (USPHS)	Capital Area Provider	Providers who respond only in the National Capital Region – mass gatherings on the Mall; e.g., doctors, mid-levels, nurses.
HHS (USPHS)	Mental Health Team	The mental health team can respond nationwide; provides assessment, screening, and training for behavioral health issues; psychologists, psychiatrists, licensed clinical social workers.
HHS (USPHS)	National Incident Support Team (NIST)	The NIST consists of 72 USPHS-trained Commissioned Corps officer responders. Each NIST is scalable, and is capable of providing only those resources needed. NIST is a Tier 1 team and can deploy within 12 hours of activation.
HHS (USPHS)	Rapid Deployment Force (RDF)	There are currently five RDFs, each of which is a workforce comprising 105+ trained USPHS Commissioned Corps officer responders. Yet each RDF is scalable, and is capable of providing only those resources needed. The RDF is also responsive; as a Tier 1 team the RDF can deploy within 12 hours of activation.
HHS (USPHS)	Regional Incident Support Team (RIST)	RISTs provide rapid assessments and initial incident coordination resources and assistance to state, tribal, and local health authorities within defined regions of the United States. There are currently eleven RISTs, each of which is aligned with one of the HHS regions (including the National Capital Region).
HHS (USPHS)	Service Access Teams	Service Access Teams provide assistance to health care facilities and other entities where federally medically evacuated patients have been sent.
HHS (USPHS)	Tier 1 – USPHS-Commissioned Corps Response Groups	Tier 1 teams (RDFs, NISTs, and RISTs) have implicit concurrence on the part of their respective agencies for deployability within 12 hours.
HHS (USPHS)	Tier 2 – USPHS-Commissioned Corps Response Groups	Tier 2 officers are also formally rostered on response teams (APHTs, Mental Health Teams, Capital Area Provider Teams, and Services Access Teams) and maintain implicit agency concurrence for deployability within 36 hours.
HHS (USPHS)	Tier 3 – USPHS-Commissioned Corps Response Groups	Tier 3 officers are not rostered on specific teams and do not maintain implicit agency concurrence but are on call once within every five-month period—their activation requires agency concurrence at the time of deployment.
GSA	Public Building Services	GSA provides leasing specialists to find federal facility
United States Postal Inspection Service	United States Postal Inspection Service	Conducts biological surveillance for pathogens shipped through the mail.
Department of Veteran's Affairs (VA)	Federal Coordinating Centers	Federal Coordinating Centers are DOD or VA centers whose personnel recruit non-federal hospitals within approximately a 50-mile radius of the airport or military airfield where NDMS hospital inpatients from affected states will likely arrive and be triaged, received, and transported to NDMS partner hospitals for inpatient medical care
Department of Veteran's Affairs (VA)	Disaster Emergency Medical Personnel System	Veterans Health Administration's main deployment program for clinical and non-clinical staff to an emergency or disaster. This program may be used for an internal VA mission as well as supporting a mission after a Presidential Disaster Declaration under the NRF ESF #8 (Public Health and Medical Services).

III. Sample Exercises

Example 1: Cholera Epidemic in Iraq						
Epidemiologic Rating Key Epidemiologic Indicators (#of cases, case detection rate, transmission potential, mode of transmission, severity of illness)	**1a.** **Normal Ops**	**1b.** **Elevated Threat** Assessment: Yellow Growing number of cases, mortality rate within range, interventions available	**1c.** **Credible Threat**	**2a.** **Public Health Emergency / PHEIC**	**2b.** **Worsening public health emergency indicators/ PHEIC**	**2c.** **Improving public health emergency indicators/ PHEIC**
Other Critical Dimensions						
Humanitarian/development impact Indicators (mortality, impact on health/econ system, vulnerable children, food security)		Assessment: Orange/ Heightened Concern Cholera outbreak is symptom of worsening humanitarian situation due to conflict. Humanitarian actors are providing assistance and interventions available. Permanent solutions or water sanitation infrastructure not feasible due to conflict				
Security/Political Stability Indicators (US relationship, conflict/ security, governance)		Assessment: Red/Crisis Conflict situation, difficult to provide assistance.				
Transmission/outbreak/panic potential in the United States		Assessment: Green/Minimal concern Very low transmission risk to the US and high capacity to prevent spread				
Overall Assessment:	**Monitor:** UN Agencies and humanitarian actors are accustomed to addressing cholera outbreaks, and the outbreak can be handled through HA channels. Near term situation unlikely to change and provide opportunities for water and sanitation (wat/san) infrastructure.					

Example 2: Middle East Respiratory Syndrome-Coronavirus cases in Jordan

Epidemiologic Rating Key Epidemiologic Indicators (#of cases, case detection rate, transmission potential, mode of transmission, severity of illness)	**1a. Normal Ops**	**1b. Elevated Threat** **Assessment:** Yellow Sporadic reports of cases in hospital settings, transmission and mortality rates within range	**1c. Credible Threat**	**2a. Public Health Emergency / PHEIC**	**2b. Worsening public health emergency indicators/ PHEIC**	**2c. Improving public health emergency indicators/ PHEIC**
Other Critical Dimensions						
Humanitarian/development impact Indicators (mortality, impact on health/econ system, vulnerable children, food security)		**Assessment:** Green/Minimal Concern Cases are not causing widespread outbreaks or impacting development or overall health systems. Cases not detected in refugee camp areas or internally displaced persons camp areas				
Security/Political Stability Indicators (US relationship, conflict/ security, governance)		**Assessment:** Green/Minimal concern Overall stable government and system, strained due to neighboring conflicts				
Transmission/outbreak/panic potential in the United States		**Assessment:** Yellow/Elevated concern The US has diagnostic capacity and experience treating MERS case. Very low outbreak potential				
Overall Assessment:	**Monitor:** The number of MERS-COV cases has been low and has not posed too high a burden on the Jordanian health system to date. Given the characteristics of MERS, the situation warrants monitoring but no other action needed.					

Example 3a: Ebola in West Africa in March, 2014

Epidemiologic Rating Key Epidemiologic Indicators (#of cases, case detection rate, transmission potential, mode of transmission, severity of illness)	**1a. Normal Ops**	**1b. Elevated Threat**	**1c. Credible Threat** Assessment: Yellow	**2a. Public Health Emergency / PHEIC**	**2b. Worsening public health emergency indicators/ PHEIC**	**2c. Improving public health emergency indicators/ PHEIC**
Other Critical Dimensions						
Humanitarian/development impact Indicators (mortality, impact on health/econ system, vulnerable children, food security)			Assessment: Yellow, elevated concern			
Security/Political Stability Indicators (US relationship, conflict/ security, governance)			**Assessment: Green/Minimal concern** **Overall stable**			
Transmission/outbreak/panic potential in the United States			**Assessment: Green/Minimal concern** **The U.S. was not anticipating domestic cases**			
Overall Assessment:	**Monitor:** Ebola outbreaks occurred occasionally in Africa in the past and were contained after an initial spread. WHO and CDC experts were already in the field. Expectation was that this outbreak would be contained quickly.					

Example 3b: Ebola in West Africa in August, 2014

Epidemiologic Rating Key Epidemiologic Indicators (#of cases, case detection rate, transmission potential, mode of transmission, severity of illness)	**1a.** **Normal Ops**	**1b.** **Elevated Threat**	**1c.** **Credible Threat**	**2a.** **Public Health Emergency / PHEIC**	**2b.** **Worsening public health emergency indicators/ PHEIC**	**2c.** **Improving public health emergency indicators/ PHEIC**
Other Critical Dimensions						
Humanitarian/development impact Indicators (mortality, impact on health/econ system, vulnerable children, food security)				**Assessment:** **Red**		
Security/Political Stability Indicators (US relationship, conflict/ security, governance)				**Assessment:** **Yellow**		
Transmission/outbreak/panic potential in the United States				**Assessment:** **Green**		
Overall Assessment:	**Monitor Public Health Response:** Growing concern that the outbreak was not contained and had spread to three countries. MSF's calls on the seriousness of the outbreak was growing. WHO had just finally declared a PHEIC which mobilized additional resources. The U.S. Government was contemplating options to accelerate the response including potential mobilization and structure of a USAID DART and option to deploy the US military.					

Example 3c: Ebola in West Africa in September, 2014						
Epidemiologic Rating Key Epidemiologic Indicators (#of cases, case detection rate, transmission potential, mode of transmission, severity of illness)	**1a. Normal Ops**	**1b. Elevated Threat**	**1c. Credible Threat**	**2a. Public Health Emergency / PHEIC**	**2b. Worsening public health emergency indicators/ PHEIC**	**2c. Improving public health emergency indicators/ PHEIC**
Other Critical Dimensions						
Humanitarian/development impact Indicators (mortality, impact on health/econ system, vulnerable children, food security)				**Assessment:** Red		
Security/Political Stability Indicators (US relationship, conflict/ security, governance)				**Assessment:** Red		
Transmission/outbreak/panic potential in the United States				**Assessment:** Red		
Overall Assessment:	**Response:** By September, it was clear that all humanitarian and public health response systems were completely overwhelmed and the outbreak was spreading and accelerating. Growing signals that regional security and stability were at risk, particularly following spread in Nigeria. Impact on flights, travel, and commerce were becoming apparent. Late September, panic was sparked in the United States following the Thomas Duncan case and subsequent spread to two nurses in Dallas, Texas.					

IV. Communications

Internal and external communications are critical throughout the course of the response to an emerging pathogen. Internal communication mechanisms are the Federal Government's operational communication resources and links for supporting response and recovery operations, which include pathways for coordinating support for public health and medical services. External communication mechanisms are public information and warning resources for public reception of and compliance with public health guidance, including guidance on personal protective measures and access to health and medical interventions.

Key Questions:

1. How is information being shared across the Federal Government?
2. How is information being shared with SLTT partners?
3. What are the messages to convey to the public regarding risk, preparations, and availability of MCM?

Internal Communication

HHS leads and coordinates all Federal communication, messaging, and release of public health and medical information both across the U.S. Government and internationally with the World Health Organization (WHO) and affected countries. For internal U.S. Government communications, the HHS Secretary's Operation Center (SOC) is the primary national-level hub for situational awareness and information-sharing related to public health and medical response.

More broadly, DHS coordinates internal and external communications related to domestic incident management. For internal U.S. Government communications, the DHS National Operations Center (NOC) is the primary national-level hub for domestic situational awareness, a common operating picture (COP), information fusion, and information sharing pertaining to domestic incident management. To coordinate external communications related to an incident, DHS convenes the National Incident Communication Conference Line (NICCL) for Federal communicators to exchange critical and timely incident information and develop coordinated Federal messaging strategies related to an incident.

External Communication

As the lead agency for health and medical information, HHS plays a primary role within the overarching framework provided by DHS in an emerging infectious disease response. HHS coordinates communications information related to the public health and medical aspects of a response, particularly in a public health specific emergency. The HHS Secretary is the primary spokesperson for the public health and medical response, supported by subject matter experts within HHS.

In the event of a terrorist incident, the FBI would be consulted before issuing sensitive media/press releases.

The White House Office of Communications provides strategic direction for public information and warning activities. During an early response requiring a coordinated Federal effort, the White House Office of Communications would provide strategic communications guidance and maintain overall authority over public information and warning activities.

V. Concept of Operations: Domestic Response

Responses to infectious disease outbreaks are primarily managed and monitored by public health agencies at the SLTT level of government. As incidents change in size, scope and complexity, a higher-level of coordination between public health, emergency management, and law enforcement communities may be required in the form of supplemental and complimentary support. The Public Health Agency at the local or state level should be deemed the lead response agency with HHS as the default LFA and originator for federal agency-to-agency operational support tasks during any biological incident. Many conceivable instances will not result in a Stafford Act declaration, yet, additional resources and coordination support may be facilitated by FEMA to deliver supplemental support to the lead public health agencies. Depending on the situation and in rare instances, other federal agencies may play a lead coordinating role with HHS retaining its lead functional responsibilities to deliver public health and medical capabilities.

Domestic public health and medical response and recovery occur in three phases: preparedness, response, and recovery.

Phase 1			Phase2			Phase 3
Primarily Pre-Incident			Begins when an Incident Occurs Upon Notification			Sustained Operations
1a	1b	1c	2a	2b	2c	3a
Normal Operations	Increased Likelihood or Elevated Threat	Near Certainty or Credible Threat	Activation, Situational Assessment, and Movement	Employment of Resources and Stabilization	Intermediate Operations	Long-Term Recovery Operations

In the event of a suspected or emerging biological incident (Phase 1c), the Federal Government may conduct enhanced public health surveillance and increase coordination among Federal partners and SLTT authorities. A Unified Coordination Group (UCG) may convene to facilitate information sharing and coordination. In this phase, DHS and HHS co-lead the UCG at the national level. If there is actionable intelligence of a deliberate incident, the FBI leads and coordinates law enforcement and investigative matters to counter the threat.

In conjunction with the national level, affected SLTT jurisdictions may engage with key stakeholders, including health departments, emergency management, law enforcement, environmental quality, and fusion centers in order to increase their information sharing and coordination. Early in a response, SLTT jurisdictions may also increase public health surveillance and sampling, develop public messaging strategies, and implement response plans. At the same time, affected SLTT jurisdictions maintain communications with Federal departments and agencies to provide situational awareness and to coordinate public messaging, as appropriate.

UNITED NATIONS

TRANSFORMING OUR WORLD:

THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

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Transforming our world: the 2030 Agenda for Sustainable Development 3
- Preamble 3
- *People* 3
- *Planet* 3
- *Prosperity* 3
- *Peace* 3
- *Partnership* 4

Declaration 4
- Introduction 4
- Our vision 5
- Our shared principles and commitments 6
- Our world today 6
- The new Agenda 7
- Means of implementation 12
- Follow-up and review 13
- A call for action to change our world 14

Sustainable Development Goals and targets 14
- Goal 1. End poverty in all its forms everywhere 17
- Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture 17
- Goal 3. Ensure healthy lives and promote well-being for all at all ages 18
- Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all 19
- Goal 5. Achieve gender equality and empower all women and girls 20
- Goal 6. Ensure availability and sustainable management of water and sanitation for all 20
- Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all 21
- Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all 21
- Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation 22
- Goal 10. Reduce inequality within and among countries 23
- Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable 24

Goal 12. Ensure sustainable consumption and production patterns 24

Goal 13. Take urgent action to combat climate change and its impacts* 25

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development 26

Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss 27

Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels 28

Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development .. 28

Finance 28

Technology 29

Capacity-building 29

Trade 29

Systemic issues 29

Means of implementation and the Global Partnership 30

Follow-up and review 34

National level 36

Regional level 36

Global level 36

Transforming our world: the 2030 Agenda for Sustainable Development

Preamble

This Agenda is a plan of action for people, planet and prosperity. It also seeks to strengthen universal peace in larger freedom. We recognize that eradicating poverty in all its forms and dimensions, including extreme poverty, is the greatest global challenge and an indispensable requirement for sustainable development.

All countries and all stakeholders, acting in collaborative partnership, will implement this plan. We are resolved to free the human race from the tyranny of poverty and want and to heal and secure our planet. We are determined to take the bold and transformative steps which are urgently needed to shift the world on to a sustainable and resilient path. As we embark on this collective journey, we pledge that no one will be left behind.

The 17 Sustainable Development Goals and 169 targets which we are announcing today demonstrate the scale and ambition of this new universal Agenda. They seek to build on the Millennium Development Goals and complete what they did not achieve. They seek to realize the human rights of all and to achieve gender equality and the empowerment of all women and girls. They are integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental.

The Goals and targets will stimulate action over the next 15 years in areas of critical importance for humanity and the planet.

People

We are determined to end poverty and hunger, in all their forms and dimensions, and to ensure that all human beings can fulfil their potential in dignity and equality and in a healthy environment.

Planet

We are determined to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations.

Prosperity

We are determined to ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social and technological progress occurs in harmony with nature.

Peace

We are determined to foster peaceful, just and inclusive societies which are free from fear and violence. There can be no sustainable development without peace and no peace without sustainable development.

Partnership

We are determined to mobilize the means required to implement this Agenda through a revitalized Global Partnership for Sustainable Development, based on a spirit of strengthened global solidarity, focused in particular on the needs of the poorest and most vulnerable and with the participation of all countries, all stakeholders and all people.

The interlinkages and integrated nature of the Sustainable Development Goals are of crucial importance in ensuring that the purpose of the new Agenda is realized. If we realize our ambitions across the full extent of the Agenda, the lives of all will be profoundly improved and our world will be transformed for the better.

Declaration

Introduction

1. We, the Heads of State and Government and High Representatives, meeting at United Nations Headquarters in New York from 25 to 27 September 2015 as the Organization celebrates its seventieth anniversary, have decided today on new global Sustainable Development Goals.

2. On behalf of the peoples we serve, we have adopted a historic decision on a comprehensive, far-reaching and people-centred set of universal and transformative Goals and targets. We commit ourselves to working tirelessly for the full implementation of this Agenda by 2030. We recognize that eradicating poverty in all its forms and dimensions, including extreme poverty, is the greatest global challenge and an indispensable requirement for sustainable development. We are committed to achieving sustainable development in its three dimensions — economic, social and environmental — in a balanced and integrated manner. We will also build upon the achievements of the Millennium Development Goals and seek to address their unfinished business.

3. We resolve, between now and 2030, to end poverty and hunger everywhere; to combat inequalities within and among countries; to build peaceful, just and inclusive societies; to protect human rights and promote gender equality and the empowerment of women and girls; and to ensure the lasting protection of the planet and its natural resources. We resolve also to create conditions for sustainable, inclusive and sustained economic growth, shared prosperity and decent work for all, taking into account different levels of national development and capacities.

4. As we embark on this great collective journey, we pledge that no one will be left behind. Recognizing that the dignity of the human person is fundamental, we wish to see the Goals

and targets met for all nations and peoples and for all segments of society. And we will endeavour to reach the furthest behind first.

5. This is an Agenda of unprecedented scope and significance. It is accepted by all countries and is applicable to all, taking into account different national realities, capacities and levels of development and respecting national policies and priorities. These are universal goals and targets which involve the entire world, developed and developing countries alike. They are integrated and indivisible and balance the three dimensions of sustainable development.

6. The Goals and targets are the result of over two years of intensive public consultation and engagement with civil society and other stakeholders around the world, which paid particular attention to the voices of the poorest and most vulnerable. This consultation included valuable work done by the Open Working Group of the General Assembly on Sustainable Development Goals and by the United Nations, whose Secretary-General provided a synthesis report in December 2014.

Our vision

7. In these Goals and targets, we are setting out a supremely ambitious and transformational vision. We envisage a world free of poverty, hunger, disease and want, where all life can thrive. We envisage a world free of fear and violence. A world with universal literacy. A world with equitable and universal access to quality education at all levels, to health care and social protection, where physical, mental and social well-being are assured. A world where we reaffirm our commitments regarding the human right to safe drinking water and sanitation and where there is improved hygiene; and where food is sufficient, safe, affordable and nutritious. A world where human habitats are safe, resilient and sustainable and where there is universal access to affordable, reliable and sustainable energy.

8. We envisage a world of universal respect for human rights and human dignity, the rule of law, justice, equality and non-discrimination; of respect for race, ethnicity and cultural diversity; and of equal opportunity permitting the full realization of human potential and contributing to shared prosperity. A world which invests in its children and in which every child grows up free from violence and exploitation. A world in which every woman and girl enjoys full gender equality and all legal, social and economic barriers to their empowerment have been removed. A just, equitable, tolerant, open and socially inclusive world in which the needs of the most vulnerable are met.

9. We envisage a world in which every country enjoys sustained, inclusive and sustainable economic growth and decent work for all. A world in which consumption and production patterns and use of all natural resources — from air to land, from rivers, lakes and aquifers to oceans and seas — are sustainable. One in which democracy, good governance and the rule of law, as well as an enabling environment at the national and international levels, are essential for sustainable development, including sustained and inclusive economic growth, social development, environmental protection and the eradication of poverty and hunger. One in which development and the application of technology are climate-sensitive, respect biodiversity and are resilient. One in which humanity lives in harmony with nature and in which wildlife and other living species are protected.

Our shared principles and commitments

10. The new Agenda is guided by the purposes and principles of the Charter of the United Nations, including full respect for international law. It is grounded in the Universal Declaration of Human Rights, international human rights treaties, the Millennium Declaration and the 2005 World Summit Outcome. It is informed by other instruments such as the Declaration on the Right to Development.

11. We reaffirm the outcomes of all major United Nations conferences and summits which have laid a solid foundation for sustainable development and have helped to shape the new Agenda. These include the Rio Declaration on Environment and Development, the World Summit on Sustainable Development, the World Summit for Social Development, the Programme of Action of the International Conference on Population and Development, the Beijing Platform for Action and the United Nations Conference on Sustainable Development. We also reaffirm the follow-up to these conferences, including the outcomes of the Fourth United Nations Conference on the Least Developed Countries, the third International Conference on Small Island Developing States, the second United Nations Conference on Landlocked Developing Countries and the Third United Nations World Conference on Disaster Risk Reduction.

12. We reaffirm all the principles of the Rio Declaration on Environment and Development, including, inter alia, the principle of common but differentiated responsibilities, as set out in principle 7 thereof.

13. The challenges and commitments identified at these major conferences and summits are interrelated and call for integrated solutions. To address them effectively, a new approach is needed. Sustainable development recognizes that eradicating poverty in all its forms and dimensions, combating inequality within and among countries, preserving the planet, creating sustained, inclusive and sustainable economic growth and fostering social inclusion are linked to each other and are interdependent.

Our world today

14. We are meeting at a time of immense challenges to sustainable development. Billions of our citizens continue to live in poverty and are denied a life of dignity. There are rising inequalities within and among countries. There are enormous disparities of opportunity, wealth and power. Gender inequality remains a key challenge. Unemployment, particularly youth unemployment, is a major concern. Global health threats, more frequent and intense natural disasters, spiralling conflict, violent extremism, terrorism and related humanitarian crises and forced displacement of people threaten to reverse much of the development progress made in recent decades. Natural resource depletion and adverse impacts of environmental degradation, including desertification, drought, land degradation, freshwater scarcity and loss of biodiversity, add to and exacerbate the list of challenges which humanity faces. Climate change is one of the greatest challenges of our time and its adverse impacts undermine the ability of all countries to achieve sustainable development. Increases in global temperature, sea level rise, ocean acidification and other climate change impacts are seriously

affecting coastal areas and low-lying coastal countries, including many least developed countries and small island developing States. The survival of many societies, and of the biological support systems of the planet, is at risk.

15. It is also, however, a time of immense opportunity. Significant progress has been made in meeting many development challenges. Within the past generation, hundreds of millions of people have emerged from extreme poverty. Access to education has greatly increased for both boys and girls. The spread of information and communications technology and global interconnectedness has great potential to accelerate human progress, to bridge the digital divide and to develop knowledge societies, as does scientific and technological innovation across areas as diverse as medicine and energy.

16. Almost 15 years ago, the Millennium Development Goals were agreed. These provided an important framework for development and significant progress has been made in a number of areas. But the progress has been uneven, particularly in Africa, least developed countries, landlocked developing countries and small island developing States, and some of the Millennium Development Goals remain off-track, in particular those related to maternal, newborn and child health and to reproductive health. We recommit ourselves to the full realization of all the Millennium Development Goals, including the off-track Millennium Development Goals, in particular by providing focused and scaled-up assistance to least developed countries and other countries in special situations, in line with relevant support programmes. The new Agenda builds on the Millennium Development Goals and seeks to complete what they did not achieve, particularly in reaching the most vulnerable.

17. In its scope, however, the framework we are announcing today goes far beyond the Millennium Development Goals. Alongside continuing development priorities such as poverty eradication, health, education and food security and nutrition, it sets out a wide range of economic, social and environmental objectives. It also promises more peaceful and inclusive societies. It also, crucially, defines means of implementation. Reflecting the integrated approach that we have decided on, there are deep interconnections and many cross-cutting elements across the new Goals and targets.

The new Agenda

18. We are announcing today 17 Sustainable Development Goals with 169 associated targets which are integrated and indivisible. Never before have world leaders pledged common action and endeavour across such a broad and universal policy agenda. We are setting out together on the path towards sustainable development, devoting ourselves collectively to the pursuit of global development and of “win-win” cooperation which can bring huge gains to all countries and all parts of the world. We reaffirm that every State has, and shall freely exercise, full permanent sovereignty over all its wealth, natural resources and economic activity. We will implement the Agenda for the full benefit of all, for today’s generation and for future generations. In doing so, we reaffirm our commitment to international law and emphasize that the Agenda is to be implemented in a manner that is consistent with the rights and obligations of States under international law.

19. We reaffirm the importance of the Universal Declaration of Human Rights, as well as other international instruments relating to human rights and international law. We emphasize the responsibilities of all States, in conformity with the Charter of the United Nations, to respect, protect and promote human rights and fundamental freedoms for all, without distinction of any kind as to race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth, disability or other status.

20. Realizing gender equality and the empowerment of women and girls will make a crucial contribution to progress across all the Goals and targets. The achievement of full human potential and of sustainable development is not possible if one half of humanity continues to be denied its full human rights and opportunities. Women and girls must enjoy equal access to quality education, economic resources and political participation as well as equal opportunities with men and boys for employment, leadership and decision-making at all levels. We will work for a significant increase in investments to close the gender gap and strengthen support for institutions in relation to gender equality and the empowerment of women at the global, regional and national levels. All forms of discrimination and violence against women and girls will be eliminated, including through the engagement of men and boys. The systematic mainstreaming of a gender perspective in the implementation of the Agenda is crucial.

21. The new Goals and targets will come into effect on 1 January 2016 and will guide the decisions we take over the next 15 years. All of us will work to implement the Agenda within our own countries and at the regional and global levels, taking into account different national realities, capacities and levels of development and respecting national policies and priorities. We will respect national policy space for sustained, inclusive and sustainable economic growth, in particular for developing States, while remaining consistent with relevant international rules and commitments. We acknowledge also the importance of the regional and subregional dimensions, regional economic integration and interconnectivity in sustainable development. Regional and subregional frameworks can facilitate the effective translation of sustainable development policies into concrete action at the national level.

22. Each country faces specific challenges in its pursuit of sustainable development. The most vulnerable countries and, in particular, African countries, least developed countries, landlocked developing countries and small island developing States, deserve special attention, as do countries in situations of conflict and post-conflict countries. There are also serious challenges within many middle-income countries.

23. People who are vulnerable must be empowered. Those whose needs are reflected in the Agenda include all children, youth, persons with disabilities (of whom more than 80 per cent live in poverty), people living with HIV/AIDS, older persons, indigenous peoples, refugees and internally displaced persons and migrants. We resolve to take further effective measures and actions, in conformity with international law, to remove obstacles and constraints, strengthen support and meet the special needs of people living in areas affected by complex humanitarian emergencies and in areas affected by terrorism.

24. We are committed to ending poverty in all its forms and dimensions, including by eradicating extreme poverty by 2030. All people must enjoy a basic standard of living,

including through social protection systems. We are also determined to end hunger and to achieve food security as a matter of priority and to end all forms of malnutrition. In this regard, we reaffirm the important role and inclusive nature of the Committee on World Food Security and welcome the Rome Declaration on Nutrition and the Framework for Action. We will devote resources to developing rural areas and sustainable agriculture and fisheries, supporting smallholder farmers, especially women farmers, herders and fishers in developing countries, particularly least developed countries.

25. We commit to providing inclusive and equitable quality education at all levels — early childhood, primary, secondary, tertiary, technical and vocational training. All people, irrespective of sex, age, race or ethnicity, and persons with disabilities, migrants, indigenous peoples, children and youth, especially those in vulnerable situations, should have access to life-long learning opportunities that help them to acquire the knowledge and skills needed to exploit opportunities and to participate fully in society. We will strive to provide children and youth with a nurturing environment for the full realization of their rights and capabilities, helping our countries to reap the demographic dividend, including through safe schools and cohesive communities and families.

26. To promote physical and mental health and well-being, and to extend life expectancy for all, we must achieve universal health coverage and access to quality health care. No one must be left behind. We commit to accelerating the progress made to date in reducing newborn, child and maternal mortality by ending all such preventable deaths before 2030. We are committed to ensuring universal access to sexual and reproductive health-care services, including for family planning, information and education. We will equally accelerate the pace of progress made in fighting malaria, HIV/AIDS, tuberculosis, hepatitis, Ebola and other communicable diseases and epidemics, including by addressing growing anti-microbial resistance and the problem of unattended diseases affecting developing countries. We are committed to the prevention and treatment of non-communicable diseases, including behavioural, developmental and neurological disorders, which constitute a major challenge for sustainable development.

27. We will seek to build strong economic foundations for all our countries. Sustained, inclusive and sustainable economic growth is essential for prosperity. This will only be possible if wealth is shared and income inequality is addressed. We will work to build dynamic, sustainable, innovative and people-centred economies, promoting youth employment and women’s economic empowerment, in particular, and decent work for all. We will eradicate forced labour and human trafficking and end child labour in all its forms. All countries stand to benefit from having a healthy and well-educated workforce with the knowledge and skills needed for productive and fulfilling work and full participation in society. We will strengthen the productive capacities of least developed countries in all sectors, including through structural transformation. We will adopt policies which increase productive capacities, productivity and productive employment; financial inclusion; sustainable agriculture, pastoralist and fisheries development; sustainable industrial development; universal access to affordable, reliable, sustainable and modern energy services; sustainable transport systems; and quality and resilient infrastructure.

28. We commit to making fundamental changes in the way that our societies produce and consume goods and services. Governments, international organizations, the business sector and other non-State actors and individuals must contribute to changing unsustainable consumption and production patterns, including through the mobilization, from all sources, of financial and technical assistance to strengthen developing countries' scientific, technological and innovative capacities to move towards more sustainable patterns of consumption and production. We encourage the implementation of the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns. All countries take action, with developed countries taking the lead, taking into account the development and capabilities of developing countries.

29. We recognize the positive contribution of migrants for inclusive growth and sustainable development. We also recognize that international migration is a multidimensional reality of major relevance for the development of countries of origin, transit and destination, which requires coherent and comprehensive responses. We will cooperate internationally to ensure safe, orderly and regular migration involving full respect for human rights and the humane treatment of migrants regardless of migration status, of refugees and of displaced persons. Such cooperation should also strengthen the resilience of communities hosting refugees, particularly in developing countries. We underline the right of migrants to return to their country of citizenship, and recall that States must ensure that their returning nationals are duly received.

30. States are strongly urged to refrain from promulgating and applying any unilateral economic, financial or trade measures not in accordance with international law and the Charter of the United Nations that impede the full achievement of economic and social development, particularly in developing countries.

31. We acknowledge that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change. We are determined to address decisively the threat posed by climate change and environmental degradation. The global nature of climate change calls for the widest possible international cooperation aimed at accelerating the reduction of global greenhouse gas emissions and addressing adaptation to the adverse impacts of climate change. We note with grave concern the significant gap between the aggregate effect of parties' mitigation pledges in terms of global annual emissions of greenhouse gases by 2020 and aggregate emission pathways consistent with having a likely chance of holding the increase in global average temperature below 2 degrees Celsius or 1.5 degrees Celsius above pre-industrial levels.

32. Looking ahead to the twenty-first session of the Conference of the Parties in Paris, we underscore the commitment of all States to work for an ambitious and universal climate agreement. We reaffirm that the protocol, another legal instrument or agreed outcome with legal force under the Convention applicable to all parties shall address in a balanced manner, inter alia, mitigation, adaptation, finance, technology development and transfer and capacity-building; and transparency of action and support.

33. We recognize that social and economic development depends on the sustainable management of our planet's natural resources. We are therefore determined to conserve and sustainably use oceans and seas, freshwater resources, as well as forests, mountains and drylands and to protect biodiversity, ecosystems and wildlife. We are also determined to promote sustainable tourism, to tackle water scarcity and water pollution, to strengthen cooperation on desertification, dust storms, land degradation and drought and to promote resilience and disaster risk reduction. In this regard, we look forward to the thirteenth meeting of the Conference of the Parties to the Convention on Biological Diversity to be held in Mexico.

34. We recognize that sustainable urban development and management are crucial to the quality of life of our people. We will work with local authorities and communities to renew and plan our cities and human settlements so as to foster community cohesion and personal security and to stimulate innovation and employment. We will reduce the negative impacts of urban activities and of chemicals which are hazardous for human health and the environment, including through the environmentally sound management and safe use of chemicals, the reduction and recycling of waste and the more efficient use of water and energy. And we will work to minimize the impact of cities on the global climate system. We will also take account of population trends and projections in our national rural and urban development strategies and policies. We look forward to the upcoming United Nations Conference on Housing and Sustainable Urban Development to be held in Quito.

35. Sustainable development cannot be realized without peace and security; and peace and security will be at risk without sustainable development. The new Agenda recognizes the need to build peaceful, just and inclusive societies that provide equal access to justice and that are based on respect for human rights (including the right to development), on effective rule of law and good governance at all levels and on transparent, effective and accountable institutions. Factors which give rise to violence, insecurity and injustice, such as inequality, corruption, poor governance and illicit financial and arms flows, are addressed in the Agenda. We must redouble our efforts to resolve or prevent conflict and to support post-conflict countries, including through ensuring that women have a role in peacebuilding and State-building. We call for further effective measures and actions to be taken, in conformity with international law, to remove the obstacles to the full realization of the right of self-determination of peoples living under colonial and foreign occupation, which continue to adversely affect their economic and social development as well as their environment.

36. We pledge to foster intercultural understanding, tolerance, mutual respect and an ethic of global citizenship and shared responsibility. We acknowledge the natural and cultural diversity of the world and recognize that all cultures and civilizations can contribute to, and are crucial enablers of, sustainable development.

37. Sport is also an important enabler of sustainable development. We recognize the growing contribution of sport to the realization of development and peace in its promotion of tolerance and respect and the contributions it makes to the empowerment of women and of young people, individuals and communities as well as to health, education and social inclusion objectives.

38. We reaffirm, in accordance with the Charter of the United Nations, the need to respect the territorial integrity and political independence of States.

Means of implementation

39. The scale and ambition of the new Agenda requires a revitalized Global Partnership to ensure its implementation. We fully commit to this. This Partnership will work in a spirit of global solidarity, in particular solidarity with the poorest and with people in vulnerable situations. It will facilitate an intensive global engagement in support of implementation of all the Goals and targets, bringing together Governments, the private sector, civil society, the United Nations system and other actors and mobilizing all available resources.

40. The means of implementation targets under Goal 17 and under each Sustainable Development Goal are key to realizing our Agenda and are of equal importance with the other Goals and targets. The Agenda, including the Sustainable Development Goals, can be met within the framework of a revitalized Global Partnership for Sustainable Development, supported by the concrete policies and actions as outlined in the outcome document of the third International Conference on Financing for Development, held in Addis Ababa from 13 to 16 July 2015. We welcome the endorsement by the General Assembly of the Addis Ababa Action Agenda, which is an integral part of the 2030 Agenda for Sustainable Development. We recognize that the full implementation of the Addis Ababa Action Agenda is critical for the realization of the Sustainable Development Goals and targets.

41. We recognize that each country has primary responsibility for its own economic and social development. The new Agenda deals with the means required for implementation of the Goals and targets. We recognize that these will include the mobilization of financial resources as well as capacity-building and the transfer of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed. Public finance, both domestic and international, will play a vital role in providing essential services and public goods and in catalysing other sources of finance. We acknowledge the role of the diverse private sector, ranging from micro-enterprises to cooperatives to multinationals, and that of civil society organizations and philanthropic organizations in the implementation of the new Agenda.

42. We support the implementation of relevant strategies and programmes of action, including the Istanbul Declaration and Programme of Action, the SIDS Accelerated Modalities of Action (SAMOA) Pathway and the Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024, and reaffirm the importance of supporting the African Union's Agenda 2063 and the programme of the New Partnership for Africa's Development, all of which are integral to the new Agenda. We recognize the major challenge to the achievement of durable peace and sustainable development in countries in conflict and post-conflict situations.

43. We emphasize that international public finance plays an important role in complementing the efforts of countries to mobilize public resources domestically, especially in the poorest and most vulnerable countries with limited domestic resources. An important use of international public finance, including official development assistance (ODA), is to

catalyse additional resource mobilization from other sources, public and private. ODA providers reaffirm their respective commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of gross national income for official development assistance (ODA/GNI) to developing countries and 0.15 per cent to 0.2 per cent of ODA/GNI to least developed countries.

44. We acknowledge the importance for international financial institutions to support, in line with their mandates, the policy space of each country, in particular developing countries. We recommit to broadening and strengthening the voice and participation of developing countries — including African countries, least developed countries, landlocked developing countries, small island developing States and middle-income countries — in international economic decision-making, norm-setting and global economic governance.

45. We acknowledge also the essential role of national parliaments through their enactment of legislation and adoption of budgets and their role in ensuring accountability for the effective implementation of our commitments. Governments and public institutions will also work closely on implementation with regional and local authorities, subregional institutions, international institutions, academia, philanthropic organizations, volunteer groups and others.

46. We underline the important role and comparative advantage of an adequately resourced, relevant, coherent, efficient and effective United Nations system in supporting the achievement of the Sustainable Development Goals and sustainable development. While stressing the importance of strengthened national ownership and leadership at the country level, we express our support for the ongoing dialogue in the Economic and Social Council on the longer-term positioning of the United Nations development system in the context of this Agenda.

Follow-up and review

47. Our Governments have the primary responsibility for follow-up and review, at the national, regional and global levels, in relation to the progress made in implementing the Goals and targets over the coming 15 years. To support accountability to our citizens, we will provide for systematic follow-up and review at the various levels, as set out in this Agenda and the Addis Ababa Action Agenda. The high-level political forum under the auspices of the General Assembly and the Economic and Social Council will have the central role in overseeing follow-up and review at the global level.

48. Indicators are being developed to assist this work. Quality, accessible, timely and reliable disaggregated data will be needed to help with the measurement of progress and to ensure that no one is left behind. Such data is key to decision-making. Data and information from existing reporting mechanisms should be used where possible. We agree to intensify our efforts to strengthen statistical capacities in developing countries, particularly African countries, least developed countries, landlocked developing countries, small island developing States and middle-income countries. We are committed to developing broader measures of progress to complement gross domestic product.

A call for action to change our world

49. Seventy years ago, an earlier generation of world leaders came together to create the United Nations. From the ashes of war and division they fashioned this Organization and the values of peace, dialogue and international cooperation which underpin it. The supreme embodiment of those values is the Charter of the United Nations.

50. Today we are also taking a decision of great historic significance. We resolve to build a better future for all people, including the millions who have been denied the chance to lead decent, dignified and rewarding lives and to achieve their full human potential. We can be the first generation to succeed in ending poverty; just as we may be the last to have a chance of saving the planet. The world will be a better place in 2030 if we succeed in our objectives.

51. What we are announcing today — an Agenda for global action for the next 15 years — is a charter for people and planet in the twenty-first century. Children and young women and men are critical agents of change and will find in the new Goals a platform to channel their infinite capacities for activism into the creation of a better world.

52. “We the peoples” are the celebrated opening words of the Charter of the United Nations. It is “we the peoples” who are embarking today on the road to 2030. Our journey will involve Governments as well as parliaments, the United Nations system and other international institutions, local authorities, indigenous peoples, civil society, business and the private sector, the scientific and academic community — and all people. Millions have already engaged with, and will own, this Agenda. It is an Agenda of the people, by the people and for the people — and this, we believe, will ensure its success.

53. The future of humanity and of our planet lies in our hands. It lies also in the hands of today’s younger generation who will pass the torch to future generations. We have mapped the road to sustainable development; it will be for all of us to ensure that the journey is successful and its gains irreversible.

Sustainable Development Goals and targets

54. Following an inclusive process of intergovernmental negotiations, and based on the proposal of the Open Working Group on Sustainable Development Goals,[1] which includes a chapeau contextualizing the latter, set out below are the Goals and targets which we have agreed.

55. The Sustainable Development Goals and targets are integrated and indivisible, global in nature and universally applicable, taking into account different national realities, capacities and levels of development and respecting national policies and priorities. Targets are defined as aspirational and global, with each Government setting its own national targets guided by the global level of ambition but taking into account national circumstances. Each Government will also decide how these aspirational and global targets should be incorporated into national

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[1] Contained in the report of the Open Working Group of the General Assembly on Sustainable Development Goals (A/68/970 and Corr.1; see also A/68/970/Add.1 and 2).

planning processes, policies and strategies. It is important to recognize the link between sustainable development and other relevant ongoing processes in the economic, social and environmental fields.

56. In deciding upon these Goals and targets, we recognize that each country faces specific challenges to achieve sustainable development, and we underscore the special challenges facing the most vulnerable countries and, in particular, African countries, least developed countries, landlocked developing countries and small island developing States, as well as the specific challenges facing the middle-income countries. Countries in situations of conflict also need special attention.

57. We recognize that baseline data for several of the targets remains unavailable, and we call for increased support for strengthening data collection and capacity-building in Member States, to develop national and global baselines where they do not yet exist. We commit to addressing this gap in data collection so as to better inform the measurement of progress, in particular for those targets below which do not have clear numerical targets.

58. We encourage ongoing efforts by States in other forums to address key issues which pose potential challenges to the implementation of our Agenda, and we respect the independent mandates of those processes. We intend that the Agenda and its implementation would support, and be without prejudice to, those other processes and the decisions taken therein.

59. We recognize that there are different approaches, visions, models and tools available to each country, in accordance with its national circumstances and priorities, to achieve sustainable development; and we reaffirm that planet Earth and its ecosystems are our common home and that “Mother Earth” is a common expression in a number of countries and regions.

Sustainable Development Goals

Goal 1. End poverty in all its forms everywhere

Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Goal 3. Ensure healthy lives and promote well-being for all at all ages

Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Goal 5. Achieve gender equality and empower all women and girls

Goal 6. Ensure availability and sustainable management of water and sanitation for all

Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Goal 10. Reduce inequality within and among countries

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

Goal 12. Ensure sustainable consumption and production patterns

Goal 13. Take urgent action to combat climate change and its impacts*

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

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* Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.

Goal 1. End poverty in all its forms everywhere

1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day

1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions

1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable

1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance

1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters

1.a Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions

1.b Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions

Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture

2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round

2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons

2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment

2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality

2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed

2.a Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries

2.b Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round

2.c Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility

Goal 3. Ensure healthy lives and promote well-being for all at all ages

3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births

3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births

3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases

3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being

3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol

3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents

3.7 By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes

3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all

3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

3.a Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate

3.b Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all

3.c Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States

3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks

Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes

4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education

4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university

4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship

4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations

4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy

4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development

4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all

4.b By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries

4.c By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States

Goal 5. Achieve gender equality and empower all women and girls

5.1 End all forms of discrimination against all women and girls everywhere

5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation

5.3 Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation

5.4 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate

5.5 Ensure women’s full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life

5.6 Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences

5.a Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws

5.b Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women

5.c Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels

Goal 6. Ensure availability and sustainable management of water and sanitation for all

6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all

6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate

6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

6.a By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies

6.b Support and strengthen the participation of local communities in improving water and sanitation management

Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

7.1 By 2030, ensure universal access to affordable, reliable and modern energy services

7.2 By 2030, increase substantially the share of renewable energy in the global energy mix

7.3 By 2030, double the global rate of improvement in energy efficiency

7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology

7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support

Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries

8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors

8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services

8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead

8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value

8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training

8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms

8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment

8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products

8.10 Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all

8.a Increase Aid for Trade support for developing countries, in particular least developed countries, including through the Enhanced Integrated Framework for Trade-related Technical Assistance to Least Developed Countries

8.b By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labour Organization

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries

9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets

9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending

9.a Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States

9.b Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities

9.c Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020

Goal 10. Reduce inequality within and among countries

10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average

10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status

10.3 Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard

10.4 Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality

10.5 Improve the regulation and monitoring of global financial markets and institutions and strengthen the implementation of such regulations

10.6 Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions

10.7 Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies

10.a Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements

10.b Encourage official development assistance and financial flows, including foreign direct investment, to States where the need is greatest, in particular least developed countries, African countries, small island developing States and landlocked developing countries, in accordance with their national plans and programmes

10.c By 2030, reduce to less than 3 per cent the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5 per cent

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums

11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries

11.4 Strengthen efforts to protect and safeguard the world’s cultural and natural heritage

11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations

11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning

11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels

11.c Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials

Goal 12. Ensure sustainable consumption and production patterns

12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries

12.2 By 2030, achieve the sustainable management and efficient use of natural resources

12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses

12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment

12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle

12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities

12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature

12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production

12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products

12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities

Goal 13. Take urgent action to combat climate change and its impacts*

13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

13.2 Integrate climate change measures into national policies, strategies and planning

13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

13.a Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible

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* Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.

13.b Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans

14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels

14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics

14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information

14.6 By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation[2]

14.7 By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism

14.a Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries

14.b Provide access for small-scale artisanal fishers to marine resources and markets

14.c Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of “The future we want”

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[2] Taking into account ongoing World Trade Organization negotiations, the Doha Development Agenda and the Hong Kong ministerial mandate.

Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world

15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development

15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species

15.6 Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed

15.7 Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products

15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species

15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts

15.a Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems

15.b Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation

15.c Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities

Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

16.1 Significantly reduce all forms of violence and related death rates everywhere

16.2 End abuse, exploitation, trafficking and all forms of violence against and torture of children

16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all

16.4 By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime

16.5 Substantially reduce corruption and bribery in all their forms

16.6 Develop effective, accountable and transparent institutions at all levels

16.7 Ensure responsive, inclusive, participatory and representative decision-making at all levels

16.8 Broaden and strengthen the participation of developing countries in the institutions of global governance

16.9 By 2030, provide legal identity for all, including birth registration

16.10 Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements

16.a Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime

16.b Promote and enforce non-discriminatory laws and policies for sustainable development

Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

Finance

17.1 Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection

17.2 Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of gross national income for official development assistance (ODA/GNI) to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries

17.3 Mobilize additional financial resources for developing countries from multiple sources

17.4 Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress

17.5 Adopt and implement investment promotion regimes for least developed countries

Technology

17.6 Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism

17.7 Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed

17.8 Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology

Capacity-building

17.9 Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South and triangular cooperation

Trade

17.10 Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda

17.11 Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries’ share of global exports by 2020

17.12 Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access

Systemic issues

Policy and institutional coherence

17.13 Enhance global macroeconomic stability, including through policy coordination and policy coherence

17.14 Enhance policy coherence for sustainable development

17.15 Respect each country’s policy space and leadership to establish and implement policies for poverty eradication and sustainable development

Multi-stakeholder partnerships

17.16 Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries

17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships

Data, monitoring and accountability

17.18 By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts

17.19 By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries

Means of implementation and the Global Partnership

60. We reaffirm our strong commitment to the full implementation of this new Agenda. We recognize that we will not be able to achieve our ambitious Goals and targets without a revitalized and enhanced Global Partnership and comparably ambitious means of implementation. The revitalized Global Partnership will facilitate an intensive global engagement in support of implementation of all the Goals and targets, bringing together Governments, civil society, the private sector, the United Nations system and other actors and mobilizing all available resources.

61. The Agenda’s Goals and targets deal with the means required to realize our collective ambitions. The means of implementation targets under each Sustainable Development Goal and Goal 17, which are referred to above, are key to realizing our Agenda and are of equal importance with the other Goals and targets. We shall accord them equal priority in our implementation efforts and in the global indicator framework for monitoring our progress.

62. This Agenda, including the Sustainable Development Goals, can be met within the framework of a revitalized Global Partnership for Sustainable Development, supported by the

concrete policies and actions outlined in the Addis Ababa Action Agenda,[3] which is an integral part of the 2030 Agenda for Sustainable Development. The Addis Ababa Action Agenda supports, complements and helps to contextualize the 2030 Agenda's means of implementation targets. It relates to domestic public resources, domestic and international private business and finance, international development cooperation, international trade as an engine for development, debt and debt sustainability, addressing systemic issues and science, technology, innovation and capacity-building, and data, monitoring and follow-up.

63. Cohesive nationally owned sustainable development strategies, supported by integrated national financing frameworks, will be at the heart of our efforts. We reiterate that each country has primary responsibility for its own economic and social development and that the role of national policies and development strategies cannot be overemphasized. We will respect each country's policy space and leadership to implement policies for poverty eradication and sustainable development, while remaining consistent with relevant international rules and commitments. At the same time, national development efforts need to be supported by an enabling international economic environment, including coherent and mutually supporting world trade, monetary and financial systems, and strengthened and enhanced global economic governance. Processes to develop and facilitate the availability of appropriate knowledge and technologies globally, as well as capacity-building, are also critical. We commit to pursuing policy coherence and an enabling environment for sustainable development at all levels and by all actors, and to reinvigorating the Global Partnership for Sustainable Development.

64. We support the implementation of relevant strategies and programmes of action, including the Istanbul Declaration and Programme of Action, the SIDS Accelerated Modalities of Action (SAMOA) Pathway and the Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014-2024, and reaffirm the importance of supporting the African Union's Agenda 2063 and the programme of the New Partnership for Africa's Development, all of which are integral to the new Agenda. We recognize the major challenge to the achievement of durable peace and sustainable development in countries in conflict and post-conflict situations.

65. We recognize that middle-income countries still face significant challenges to achieve sustainable development. In order to ensure that achievements made to date are sustained, efforts to address ongoing challenges should be strengthened through the exchange of experiences, improved coordination, and better and focused support of the United Nations development system, the international financial institutions, regional organizations and other stakeholders.

66. We underscore that, for all countries, public policies and the mobilization and effective use of domestic resources, underscored by the principle of national ownership, are central to our common pursuit of sustainable development, including achieving the Sustainable

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[3] The Addis Ababa Action Agenda of the Third International Conference on Financing for Development (Addis Ababa Action Agenda), adopted by the General Assembly on 27 July 2015 (resolution 69/313).

Development Goals. We recognize that domestic resources are first and foremost generated by economic growth, supported by an enabling environment at all levels.

67. Private business activity, investment and innovation are major drivers of productivity, inclusive economic growth and job creation. We acknowledge the diversity of the private sector, ranging from micro-enterprises to cooperatives to multinationals. We call upon all businesses to apply their creativity and innovation to solving sustainable development challenges. We will foster a dynamic and well-functioning business sector, while protecting labour rights and environmental and health standards in accordance with relevant international standards and agreements and other ongoing initiatives in this regard, such as the Guiding Principles on Business and Human Rights and the labour standards of the International Labour Organization, the Convention on the Rights of the Child and key multilateral environmental agreements, for parties to those agreements.

68. International trade is an engine for inclusive economic growth and poverty reduction, and contributes to the promotion of sustainable development. We will continue to promote a universal, rules-based, open, transparent, predictable, inclusive, non-discriminatory and equitable multilateral trading system under the World Trade Organization, as well as meaningful trade liberalization. We call upon all members of the World Trade Organization to redouble their efforts to promptly conclude the negotiations on the Doha Development Agenda. We attach great importance to providing trade-related capacity-building for developing countries, including African countries, least developed countries, landlocked developing countries, small island developing States and middle-income countries, including for the promotion of regional economic integration and interconnectivity.

69. We recognize the need to assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief, debt restructuring and sound debt management, as appropriate. Many countries remain vulnerable to debt crises and some are in the midst of crises, including a number of least developed countries, small island developing States and some developed countries. We reiterate that debtors and creditors must work together to prevent and resolve unsustainable debt situations. Maintaining sustainable debt levels is the responsibility of the borrowing countries; however we acknowledge that lenders also have a responsibility to lend in a way that does not undermine a country’s debt sustainability. We will support the maintenance of debt sustainability of those countries that have received debt relief and achieved sustainable debt levels.

70. We hereby launch a Technology Facilitation Mechanism which was established by the Addis Ababa Action Agenda in order to support the Sustainable Development Goals. The Technology Facilitation Mechanism will be based on a multi-stakeholder collaboration between Member States, civil society, the private sector, the scientific community, United Nations entities and other stakeholders and will be composed of a United Nations inter-agency task team on science, technology and innovation for the Sustainable Development Goals, a collaborative multi-stakeholder forum on science, technology and innovation for the Sustainable Development Goals and an online platform.

- The United Nations inter-agency task team on science, technology and innovation for the Sustainable Development Goals will promote coordination, coherence and cooperation within the United Nations system on science, technology and innovation-related matters, enhancing synergy and efficiency, in particular to enhance capacity-building initiatives. The task team will draw on existing resources and will work with 10 representatives from civil society, the private sector and the scientific community to prepare the meetings of the multi-stakeholder forum on science, technology and innovation for the Sustainable Development Goals, as well as in the development and operationalization of the online platform, including preparing proposals for the modalities for the forum and the online platform. The 10 representatives will be appointed by the Secretary-General, for periods of two years. The task team will be open to the participation of all United Nations agencies, funds and programmes and the functional commissions of the Economic and Social Council and it will initially be composed of the entities that currently integrate the informal working group on technology facilitation, namely, the Department of Economic and Social Affairs of the Secretariat, the United Nations Environment Programme, the United Nations Industrial Development Organization, the United Nations Educational, Scientific and Cultural Organization, the United Nations Conference on Trade and Development, the International Telecommunication Union, the World Intellectual Property Organization and the World Bank.
- The online platform will be used to establish a comprehensive mapping of, and serve as a gateway for, information on existing science, technology and innovation initiatives, mechanisms and programmes, within and beyond the United Nations. The online platform will facilitate access to information, knowledge and experience, as well as best practices and lessons learned, on science, technology and innovation facilitation initiatives and policies. The online platform will also facilitate the dissemination of relevant open access scientific publications generated worldwide. The online platform will be developed on the basis of an independent technical assessment which will take into account best practices and lessons learned from other initiatives, within and beyond the United Nations, in order to ensure that it will complement, facilitate access to and provide adequate information on existing science, technology and innovation platforms, avoiding duplications and enhancing synergies.
- The multi-stakeholder forum on science, technology and innovation for the Sustainable Development Goals will be convened once a year, for a period of two days, to discuss science, technology and innovation cooperation around thematic areas for the implementation of the Sustainable Development Goals, congregating all relevant stakeholders to actively contribute in their area of expertise. The forum will provide a venue for facilitating interaction, matchmaking and the establishment of networks between relevant stakeholders and multi-stakeholder partnerships in order to identify and examine technology needs and gaps, including on scientific cooperation, innovation and capacity-building, and also in order to help to facilitate development, transfer and dissemination of relevant technologies for the Sustainable Development Goals. The meetings of the forum will be convened by the President of the Economic and Social

Council before the meeting of the high-level political forum under the auspices of the Council or, alternatively, in conjunction with other forums or conferences, as appropriate, taking into account the theme to be considered and on the basis of a collaboration with the organizers of the other forums or conferences. The meetings of the forum will be co-chaired by two Member States and will result in a summary of discussions elaborated by the two co-Chairs, as an input to the meetings of the high-level political forum, in the context of the follow-up and review of the implementation of the post-2015 development agenda.

- The meetings of the high-level political forum will be informed by the summary of the multi-stakeholder forum. The themes for the subsequent multi-stakeholder forum on science, technology and innovation for the Sustainable Development Goals will be considered by the high-level political forum on sustainable development, taking into account expert inputs from the task team.

71. We reiterate that this Agenda and the Sustainable Development Goals and targets, including the means of implementation, are universal, indivisible and interlinked.

Follow-up and review

72. We commit to engaging in systematic follow-up and review of the implementation of this Agenda over the next 15 years. A robust, voluntary, effective, participatory, transparent and integrated follow-up and review framework will make a vital contribution to implementation and will help countries to maximize and track progress in implementing this Agenda in order to ensure that no one is left behind.

73. Operating at the national, regional and global levels, it will promote accountability to our citizens, support effective international cooperation in achieving this Agenda and foster exchanges of best practices and mutual learning. It will mobilize support to overcome shared challenges and identify new and emerging issues. As this is a universal Agenda, mutual trust and understanding among all nations will be important.

74. Follow-up and review processes at all levels will be guided by the following principles:

(a) They will be voluntary and country-led, will take into account different national realities, capacities and levels of development and will respect policy space and priorities. As national ownership is key to achieving sustainable development, the outcome from national-level processes will be the foundation for reviews at the regional and global levels, given that the global review will be primarily based on national official data sources.

(b) They will track progress in implementing the universal Goals and targets, including the means of implementation, in all countries in a manner which respects their universal, integrated and interrelated nature and the three dimensions of sustainable development.

(c) They will maintain a longer-term orientation, identify achievements, challenges, gaps and critical success factors and support countries in making informed policy choices. They will help to mobilize the necessary means of implementation and partnerships, support the identification of solutions and best practices and promote the coordination and effectiveness of the international development system.

(d) They will be open, inclusive, participatory and transparent for all people and will support reporting by all relevant stakeholders.

(e) They will be people-centred, gender-sensitive, respect human rights and have a particular focus on the poorest, most vulnerable and those furthest behind.

(f) They will build on existing platforms and processes, where these exist, avoid duplication and respond to national circumstances, capacities, needs and priorities. They will evolve over time, taking into account emerging issues and the development of new methodologies, and will minimize the reporting burden on national administrations.

(g) They will be rigorous and based on evidence, informed by country-led evaluations and data which is high-quality, accessible, timely, reliable and disaggregated by income, sex, age, race, ethnicity, migration status, disability and geographic location and other characteristics relevant in national contexts.

(h) They will require enhanced capacity-building support for developing countries, including the strengthening of national data systems and evaluation programmes, particularly in African countries, least developed countries, small island developing States, landlocked developing countries and middle-income countries.

(i) They will benefit from the active support of the United Nations system and other multilateral institutions.

75. The Goals and targets will be followed up and reviewed using a set of global indicators. These will be complemented by indicators at the regional and national levels which will be developed by Member States, in addition to the outcomes of work undertaken for the development of the baselines for those targets where national and global baseline data does not yet exist. The global indicator framework, to be developed by the Inter-Agency and Expert Group on Sustainable Development Goal Indicators, will be agreed by the Statistical Commission by March 2016 and adopted thereafter by the Economic and Social Council and the General Assembly, in line with existing mandates. This framework will be simple yet robust, address all Sustainable Development Goals and targets, including for means of implementation, and preserve the political balance, integration and ambition contained therein.

76. We will support developing countries, particularly African countries, least developed countries, small island developing States and landlocked developing countries, in strengthening the capacity of national statistical offices and data systems to ensure access to high-quality, timely, reliable and disaggregated data. We will promote transparent and accountable scaling-up of appropriate public-private cooperation to exploit the contribution to be made by a wide range of data, including earth observation and geospatial information, while ensuring national ownership in supporting and tracking progress.

77. We commit to fully engage in conducting regular and inclusive reviews of progress at the subnational, national, regional and global levels. We will draw as far as possible on the

existing network of follow-up and review institutions and mechanisms. National reports will allow assessments of progress and identify challenges at the regional and global level. Along with regional dialogues and global reviews, they will inform recommendations for follow-up at various levels.

National level

78. We encourage all Member States to develop as soon as practicable ambitious national responses to the overall implementation of this Agenda. These can support the transition to the Sustainable Development Goals and build on existing planning instruments, such as national development and sustainable development strategies, as appropriate.

79. We also encourage Member States to conduct regular and inclusive reviews of progress at the national and subnational levels which are country-led and country-driven. Such reviews should draw on contributions from indigenous peoples, civil society, the private sector and other stakeholders, in line with national circumstances, policies and priorities. National parliaments as well as other institutions can also support these processes.

Regional level

80. Follow-up and review at the regional and subregional levels can, as appropriate, provide useful opportunities for peer learning, including through voluntary reviews, sharing of best practices and discussion on shared targets. We welcome in this respect the cooperation of regional and subregional commissions and organizations. Inclusive regional processes will draw on national-level reviews and contribute to follow-up and review at the global level, including at the high-level political forum on sustainable development.

81. Recognizing the importance of building on existing follow-up and review mechanisms at the regional level and allowing adequate policy space, we encourage all Member States to identify the most suitable regional forum in which to engage. United Nations regional commissions are encouraged to continue supporting Member States in this regard.

Global level

82. The high-level political forum will have a central role in overseeing a network of follow-up and review processes at the global level, working coherently with the General Assembly, the Economic and Social Council and other relevant organs and forums, in accordance with existing mandates. It will facilitate sharing of experiences, including successes, challenges and lessons learned, and provide political leadership, guidance and recommendations for follow-up. It will promote system-wide coherence and coordination of sustainable development policies. It should ensure that the Agenda remains relevant and ambitious and should focus on the assessment of progress, achievements and challenges faced by developed and developing countries as well as new and emerging issues. Effective linkages will be made with the follow-up and review arrangements of all relevant United Nations conferences and processes, including on least developed countries, small island developing States and landlocked developing countries.

83. Follow-up and review at the high-level political forum will be informed by an annual progress report on the Sustainable Development Goals to be prepared by the Secretary-General in cooperation with the United Nations system, based on the global indicator framework and data produced by national statistical systems and information collected at the regional level. The high-level political forum will also be informed by the *Global Sustainable Development Report*, which shall strengthen the science-policy interface and could provide a strong evidence-based instrument to support policymakers in promoting poverty eradication and sustainable development. We invite the President of the Economic and Social Council to conduct a process of consultations on the scope, methodology and frequency of the global report as well as its relation to the progress report, the outcome of which should be reflected in the ministerial declaration of the session of the high-level political forum in 2016.

84. The high-level political forum, under the auspices of the Economic and Social Council, shall carry out regular reviews, in line with General Assembly resolution 67/290 of 9 July 2013. Reviews will be voluntary, while encouraging reporting, and include developed and developing countries as well as relevant United Nations entities and other stakeholders, including civil society and the private sector. They shall be State-led, involving ministerial and other relevant high-level participants. They shall provide a platform for partnerships, including through the participation of major groups and other relevant stakeholders.

85. Thematic reviews of progress on the Sustainable Development Goals, including cross-cutting issues, will also take place at the high-level political forum. These will be supported by reviews by the functional commissions of the Economic and Social Council and other intergovernmental bodies and forums which should reflect the integrated nature of the Goals as well as the interlinkages between them. They will engage all relevant stakeholders and, where possible, feed into, and be aligned with, the cycle of the high-level political forum.

86. We welcome, as outlined in the Addis Ababa Action Agenda, the dedicated follow-up and review for the financing for development outcomes as well as all the means of implementation of the Sustainable Development Goals which is integrated with the follow-up and review framework of this Agenda. The intergovernmentally agreed conclusions and recommendations of the annual Economic and Social Council forum on financing for development will be fed into the overall follow-up and review of the implementation of this Agenda in the high-level political forum.

87. Meeting every four years under the auspices of the General Assembly, the high-level political forum will provide high-level political guidance on the Agenda and its implementation, identify progress and emerging challenges and mobilize further actions to accelerate implementation. The next high-level political forum under the auspices of the General Assembly will be held in 2019, with the cycle of meetings thus reset, in order to maximize coherence with the quadrennial comprehensive policy review process.

88. We also stress the importance of system-wide strategic planning, implementation and reporting in order to ensure coherent and integrated support to the implementation of the new Agenda by the United Nations development system. The relevant governing bodies should take action to review such support to implementation and to report on progress and obstacles. We welcome the ongoing dialogue in the Economic and Social Council on the

longer-term positioning of the United Nations development system and look forward to taking action on these issues, as appropriate.

89. The high-level political forum will support participation in follow-up and review processes by the major groups and other relevant stakeholders in line with resolution 67/290. We call upon those actors to report on their contribution to the implementation of the Agenda.

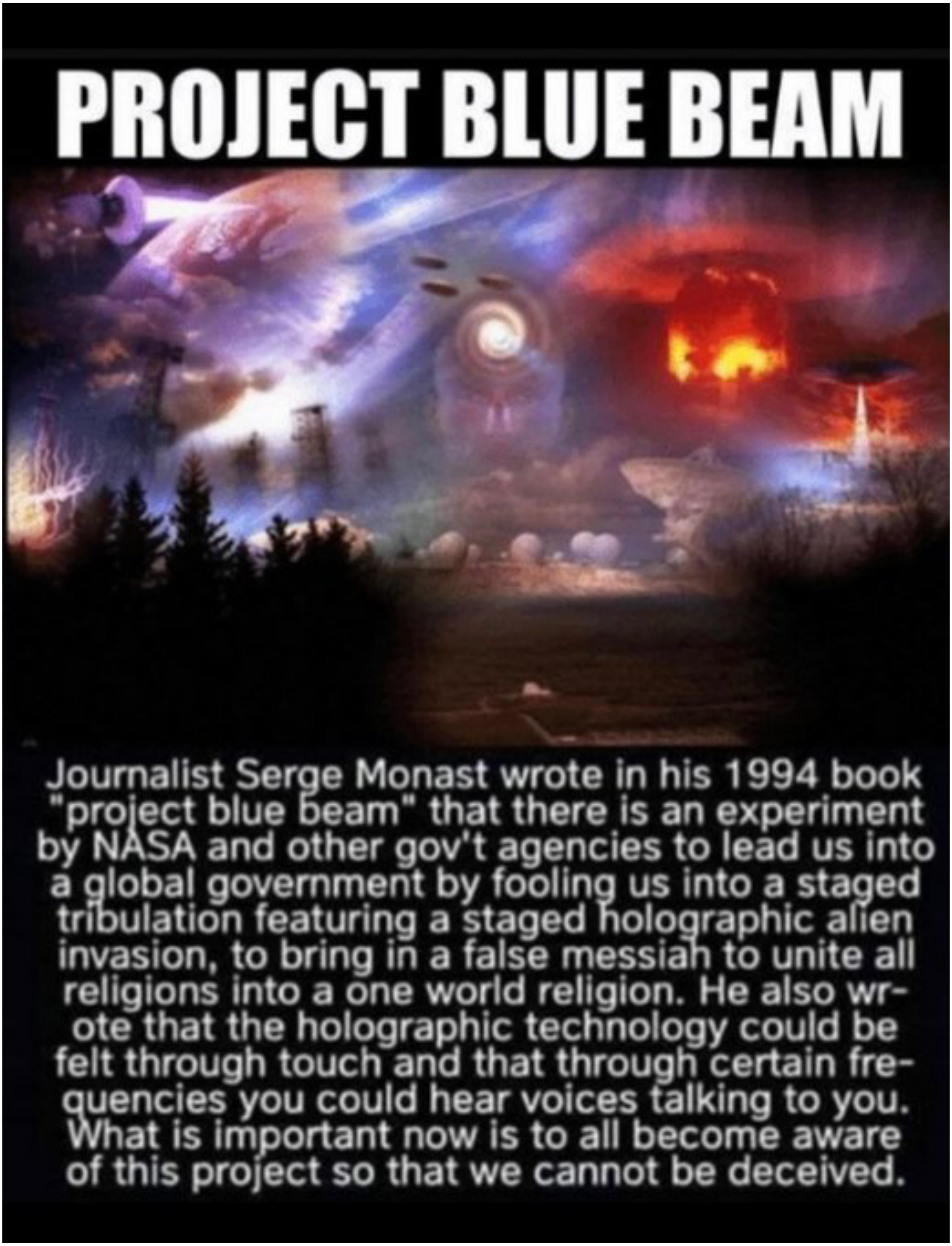
90. We request the Secretary-General, in consultation with Member States, to prepare a report, for consideration at the seventieth session of the General Assembly in preparation for the 2016 meeting of the high-level political forum, which outlines critical milestones towards coherent, efficient and inclusive follow-up and review at the global level. The report should include a proposal on the organizational arrangements for State-led reviews at the high-level political forum under the auspices of the Economic and Social Council, including recommendations on voluntary common reporting guidelines. It should clarify institutional responsibilities and provide guidance on annual themes, on a sequence of thematic reviews, and on options for periodic reviews for the high-level political forum.

91. We reaffirm our unwavering commitment to achieving this Agenda and utilizing it to the full to transform our world for the better by 2030.

UNITED NATIONS

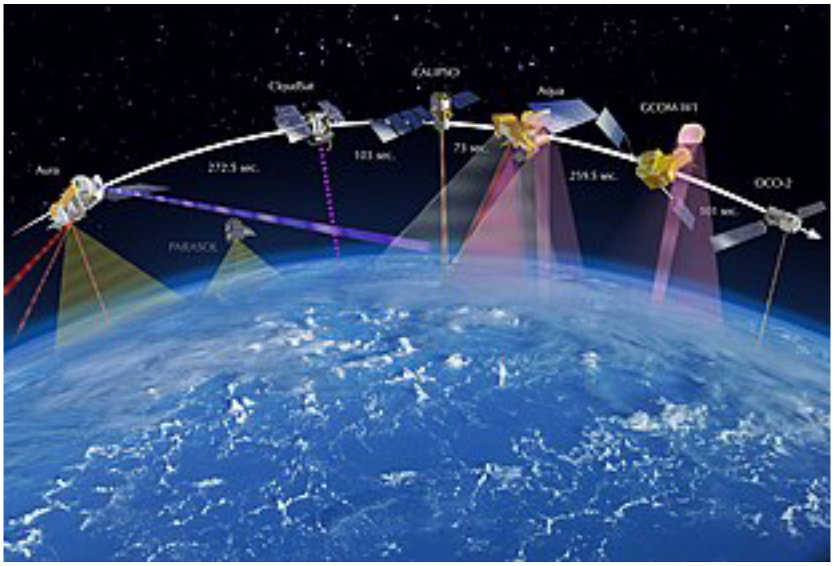
sustainabledevelopment.un.org

Believe in the
MAGIC
Blingee



PROJECT BLUE BEAM

Journalist Serge Monast wrote in his 1994 book "project blue beam" that there is an experiment by NASA and other gov't agencies to lead us into a global government by fooling us into a staged tribulation featuring a staged holographic alien invasion, to bring in a false messiah to unite all religions into a one world religion. He also wrote that the holographic technology could be felt through touch and that through certain frequencies you could hear voices talking to you. What is important now is to all become aware of this project so that we cannot be deceived.



Whoever has this article which has been deleted please send it to my email!

👇 arowgongarowsao@gmail.com

👉Recent Announced Developments in Hologram Technology_ (May 12, 2011).

The Goals of Project Blue Beam

From The International Free Press in Canada.

http://educate-yourself.org/cn/projectbluebeamintoandnworeview.shtml

Circa 1995

The Goals of Project Blue Beam (ca. 1995)

Project Blue Beam (described here)

http://educate-yourself.org/cn/projectbluebeam25jul05.shtml

This is from the International Free Press in Canada.

http://www.100777.com

Note: **Serge Monast** and **another journalist**, both of whom were researching **Project Blue Beam**, died of "heart attacks" within weeks of each other although neither had a history of heart disease. Serge was in Canada. The other Canadian journalist was visiting Ireland. Prior to his death, the Canadian government abducted Serge's daughter in an attempt to dissuade him from pursuing his research into Project Blue Beam. **His daughter was never returned**. Pseudo-heart attacks are one of the alleged methods of death induced by Project Blue Beam.

The International Free Press network is not a religious group, neither is it a political organization, but an independent worldwide investigation press agency in the field of politics, economics, medical and military. We specialize in investigating and publishing special reports and audio-tapes to expose the underworld of the United Nations conspiracy to implement a New World Order.

Our task is to make the people realize that the agenda of the New World Order is not a dream or some wild, paranoid theory; **it is a real, ongoing Satanic project**.

For what?

1. **To abolish all Christian traditional religions** in order to replace them with a one world religion based on the cult of man.
2. **To abolish all national identity and national pride** in order to establish a world identity and a world pride.
3. **To abolish the family as known today** in order to replace them with individuals all working for the glory of the new one world government.
4. **To destroy all individual artistic and scientific creativity** to implement a one world government, one-mindset.

And that kind of declaration of war from the United Nations is for the implementation of a universal, obligatory membership to the United Nations, a strengthening of the UN by a multi-military and multi-police force, a worldwide justice department through the UN with an international tribunal, a worldwide new trade-agreement for all nations, the end of cold war and local wars as they are today, and the obligation for peace by scrapping all national and state constitutions.

Also, a new world religion and a new culture for all men. If we really wish to understand the NASA Blue Beam Project, we have to return to the 'dawning of the age of Aquarius.' Remember that song? That song said, 'When the moon is in the seventh house and Jupiter aligned with Mars, then peace will guide our planet and love will steer the stars.' This related with the year 1982 to be, at that time, the opening for the conspiracy of the age of Aquarius, just before the implementation of the new world order, supposed to begin sometime in 1983.

I have to say that the **Blue Beam Project was set up for the year 1983**. It has been delayed; we don't know exactly why. But, since 1983 (eighteen years before the publication of this report), they have really improved themselves with new technology and innovations in space hardware and software in which they are involved right now to make their systems possible. So, the goals of the new age movement under which the United Nations operates right now, are the implementation of a new world 'messiah.' The tools of the new world order are,

1. an international army;
2. an international police force;
3. a world bank for the economy;
4. a world government under the United Nations;
5. a world conservatory bank for wilderness preservation around the world. That means all 'green' movements will be melded into the new international bank or disappear altogether;
6. a world religion where all church doctrines will be destroyed at the roots to be replaced by the new world religion of the age of Aquarius;
7. the world seven-races classification for all human slaves who will fulfill predetermined work tasks whether they agree with it or not;

8. the world concentration headquarters at the United Nations for those who will not accept the new system;
9. the world agriculture and food supply control which will control food and vitamin supplies around the world.
The new world order will be an 'in-between' government system for USSR, Great Britain and all its commonwealths, and the United States with its melting-pot population. This is, at the end, a new spiritual and political world order that will replace the old ones under which we live right now.

What are the New World Order plans?
They plan on the destruction of all people who believe in the Bible or worship Jesus Christ, and the complete disappearance of Christianity.

To achieve this plan, the new world order is changing national laws to assure that Christian beliefs and symbols - like the cross, for instance, will become outlawed and unlawful. Religious holidays and ceremonies will be replaced with new age festivities around the world. The elimination and complete destruction of all secret societies and secret brotherhoods, lodges and sanctuaries, all of which they view as the most serious threats to their survival after the implementation of the one world religion and one world government.

The new world order also plans the abolition of all national currencies, and the transfer of commerce to electronic cash through the superhighway. The thinkers and the basic doctrine of the new age conspiracies books are: Helena Petrovna Blavatsky, who wrote 'Isis Unveiled' and 'The Secret Doctrine.'

Alice A. Bailey who wrote 'The Race and the Initiation and Externalization of the Heirarchy;' 'Initiation: Human and Savior;' 'The Reappearance of the Christ.' (*Their*Christ is the new messiah). 'The Destiny of the Nation,' in which are plans for the disposition of the nation-states; 'The Unfinished Autobiography;' 'Disciplineship and the New Age;' 'Esoteric Psychology.'
These books are very important for new age thinkers who are exactly the ones who are conspiring to implement the New World Order.
Also, the writing of **Nicola Roerich**, who wrote, '**Matraia, (Maitreya)**' (that's their new messiah); '**Shambala, The Resplendent**,' and '**The Agni Yoga Series**.'
David Spangler who wrote, 'Revelation: The Birth of a New Age,' considered as the 'bible' inside the new age movement; 'Reflections on the Christ,' which is related to the Luciferian initiation; 'Links With Space,' which maintains that off-world aliens are supposed to come to save earthlings from themselves; 'Relationship and Identity,' 'The Love of Manifestation,' 'New Age Rifts,' and 'Toward a Planetary Vision,' which is directly related to the visions of the new world order, as they plan it to be.
Now...what those people also plan - and I repeat, this is not a dream and is not paranoid thinking,

this is real. They plan that in order to accept the new world order, all people must first accept the new age religion; to enter into the new world religion, the Christian will have to abdicate their own beliefs. So, as they said, the initiation will be on a worldwide basis inside the newly organized new Christian church (which will be a reorganized and strictly controlled Masonic temple) occult organization based on a Luciferian initiation. What we have to understand here is that no one will be able to maintain their old beliefs and, at the same time, enter into the new age religion. It will be impossible.

For those who will not accept the new world order, who will reject it, the new world order people have already built re-education concentration camps and, for those camps, they have established what they call the 'rainbow classifications' of the new world order prisoners. The rainbow is considered as the 'bridge' leading to the Satanic empire of the new world order.

We already know, for instance, that everyone will have to take an oath to Lucifer in order to cross that bridge into the new age. All who resist that initiation will be sent to detention facilities where they will be separated into different categories, known as the **Rainbow classification** of the new world order prisoners.

1. Classification of Christian children, as planned, is to be as human sacrifices where, within the black mass ceremonies, they will be forced to participate in any kind of sexual orgies or be kept as sexual slaves.
2. Classification of prisoners to be used in medical experiments where drugs and new technologies will be tested on humans.
3. Classification of healthy prisoners for the International Organ Donation Center where vital organs will be removed one by one while they are kept alive by mechanical devices.
4. Classification of all healthy underground workers. The new world order is basically a worldwide dictatorship based upon the Luciferian religion; a dictatorship with the illusion of democracy. In order to maintain the illusion of democracy, camps and slave labor will be hidden underground in massive colonies that are being built as we write this report.
5. Classification of 'Uncertain Prisoners.' In the international 're-education' center, political and religious prisoners will be re-educated (by whatever means are required) so that they may repent on international television programs and glorify the virtues of the one world government for the benefit of all humanity.
6. Classification of the International Execution Center. Clear enough!
7. Classification seven. We are still waiting on the details of the Seventh Classification, and we are awaiting verification of the colors to be assigned to these classifications of prisoners, but this is the basic agenda of those who have planned the new 'paradise' world of the future.

You must understand that when I decided to release, about six months ago, some of their plans and information concerning their most important project, which is the NASA Blue Beam Project, I wasn't certain if I would survive my stand against the new world order's plans to put down on their knees all of the world's cultures and religions.

But, now, following my own Christian conscience, my real and deep love for all my unknown brothers and sisters in America and throughout the world, I freely accept to give my life if it has to be the case for the truth, for Jesus Christ, by releasing for the first time, the four major steps of the Satanic Blue Beam Project. I ask everyone who reads the following descriptions not to be paralyzed by their natural fears, but to spread to everyone the contents of this special report, and to gather together in order to commune, to think and to organize ways to survive the new world order government showdown and power taking, because what we have to understand is that the new world government will not be something permanent, immortal; this is not the case. But what we have to do right now is learn how to organize to survive such**satanic plans**.

The Project Blue Beam/British Israel Brain Wash from the Islamic Side
http://educate-yourself.org/lte/islamicbrainwash05jul06.shtml
July 5, 2006
Re:
Project Blue Beam (http://educate-yourself.org/cn/projectbluebeam25jul05.shtml)
British Israel (http://educate-yourself.org/cn/britishisraelhiddenhand10jul05.shtml)
Subject: Only Hope after Project Blue Beam
From: hasanmujtabar@gmail.com
Date: Wed, July 5, 2006 12:45 am
To: Editor

Question

In favor of my above statement I am asking one question

The history of Humans start just 10,000 years before, Today we succeeded to develop fastest rocket with speed of 64000 km/hour, Are you sure you can even go to the end of our galaxy with this speed? With this ratio of advancement will you be able to see the farthest objects (like Quasars which are around 13 billion light years away)? Does it mean that other parts of universe are not made for us? , can we explore with 64000 km/hour or even if we get the speed of light itself? Object's data in Universe shows that we should have flying object with minimum speed of One Billion light year per second or more.

Please think.

Possible answer

Since God created the Human for the purpose, God want to introduce his properties to Humans. The problem for this introduction was that if Human will know these power then due to impurity they will use these powers for destruction (Even they had little knowledge, today they are running for third world NUCLEAR WAR) For this reason God send his prophets to purify the humans. Some Human accepted to be purified but majority did not accept. Now for those who purified themselves

God want to show them what is in universe as a first lesson. Therefore God gathered all these purified humans to a place (Bermuda Triangle) which is protected by a very special science which these impure humans can not understand (until they purify themselves). In that place these purified Humans are doing experiments (study behaviors of UFO's on internet, UFO never harm to anyone except they are attacked unnecessarily by humans) As the possessor of this science is a very powerful person so it is not allowed to transfer this science to impure Humans. Now question is when we will know about this science? Answer is when Imam Mehdi (Salam on him) and Jesus Christ (Salam on Him) will reappear, and will fill this world with justice and purified Humans, against as it was filled with injustice and impure peoples.
Please prepare yourselves for a great Revolution by purifying yourselves

The Coming "Official" Announcement of the Alien Presence on Earth
Author Unknown
http://educate-yourself.org/cn/fakedalieninvasion.shtml
(likely posted in the early 1990's)
The Coming "Official" Announcement of the Alien Presence on Earth
http://www.fortunecity.com/roswell/prediction/51/text-files/fakeinvs.txt
(THIS INFORMATION COULD SAVE YOUR LIFE AND FREEDOM. WHY "STAR WARS", THE HUBBLE SPACE TELESCOPE, THE SUDDEN FALL OF COMMUNISM?)
What is going on? Something very sinister is going on.
Polls reveal that over 90% of the Americans people believe in UFO's and 95% of these people believe the government is keeping this knowledge from the public. But Why?

Are they afraid the people will panic if an "Official" announcement were made? Hardly. Such an announcement would create interest and excitement and many questions, particularly by the churches, but do not panic. Why then the continued cover-up?
There is overwhelming evidence in the past several years from "Whistle Blowers" retired military officers who have finally said, "Enough is enough! It's time the government told the people the truth!" These officers, such as Navy Intelligence officer, William Cooper, Major John Lear (whose father founded the Lear Jet Corp.) and Air Force officer William English, to name but a few, have all discovered the truth, and at the risk of their very lives, are trying to alert YOU to the secrets behind the UFO's and the Alien Presence on this earth. These people worked on the secret projects, had access to 'classified' Top Secret documents , had seen with there own eyes 'captured' aliens, or extraterrestrial entities, UFO's and the incredible technology they brought with them.
Sightings of UFO's have been reported throughout history, and biblical and historic references to "Flaming Chariots" huge flying 'birds' and odd looking beings predate our history by thousands of years. In the 1940's several alien spacecraft were recovered by the U.S. and other countries, along with a few dead aliens and one live one they named EBE (a name suggested by **Dr. Vannever Bush**

and was short for Extraterrestrial Biological Entity).
In 1953 astronomers discovered large objects in space which were moving toward earth. At first they believed they were asteroids, but later evidence proved the **objects could only be spaceships.** Project Sigma and Project Plato intercepted alien radio communication and using the computer binary language, was able to arrange a landing that resulted in face-to-face contact with alien beings from another planet. Meanwhile, a race of human-looking aliens contacted the U.S. Government, warning us that the **aliens orbiting the equator** were **hostile beings** from **Orion**. These human-type aliens demanded we dismantle and destroy our nuclear weapons, that we were on a path of self-destruction and we must stop killing each other, stop polluting the earth, stop raping the earths natural resources and learn to live in harmony with one another. **President Eisenhower rejected these demands**.
Later in **1954**, the race of aliens, known as Greys, from Zeta Reticuli area in space, who had been orbiting the equator, landed at **Holloman Air Force Base**. they stated their planet was dying and needed quarters on earth to conduct genetic experiments that might allow their race to survive; this in exchange for certain technology. President Eisenhower met with the aliens and a formal treaty was signed [Greada treaty]. The treaty stated the aliens would not interfere in our affairs and we would not interfere in theirs. We would keep their presence on earth secret; they would furnish us with advanced technology. They could abduct humans on a limited basis for the purpose of medical examination and monitoring, with the stipulation that the humans would not be harmed, would be returned to their point of abduction, that the humans have no memory of the event. It was also agreed the **alien bases would be constructed underground**, beneath **Indian reservations** in the **4 corners area of Utah**, **New Mexico**, **Arizona** and **Colorado**. Another was to be constructed in Nevada in the area known as **S-4**, about 7 miles south of **area 51**, known as '**Dreamland**'. A multi-billion dollar secret fund was organized and kept by the **Military Office of the White House**, supposedly to build secret underground sites for the President and the staff in case of military attacks.
By secret **Executive Memorandum, NSC5410**, Eisenhower established a permanent committee known as "**Majority Twelve**" (**MJ12**) to oversee and conduct all covert activities with the aliens. This included FBI director J. Edgar Hoover and six leaders of the **Council on Foreign Relations**, known as the '**Wise Men**' and later others from the **Trilateral Commision**. **George Bush**, **Gordon Dean**, and **Zbigniew Brzezinski**were among them.
A major finding of the commission was the aliens were using humans and animals for a source on glandular secretions, enzymes, hormonal secretions, blood and in horrible genetic experiments. The aliens explained these actions as necessary for their survival, that if their genetic structure were not improved, their race would cease to exist.
The ruling powers decided that one means of funding the alien project was to **corner the illegal drug market**. A young ambitious member of the Council on Foreign Relations was approached. His name is George Bush who at the time was president and CEO of **Zapata Oil Co**. based in Texas.

Zapata Oil was experimenting with offshore oil drilling and it was arranged that the drugs could be shipped from South America to the offshore platforms by fishing boats, then transferred to the U.S. shore by normal transportation, thus avoiding search by customs agents. The plan worked better than anyone expected, and today **the CIA controls all the world's illegal drug markets**. One should remember, **it was George Bush who first started selling drugs to our children**. The drug money was used to finance the deep underground alien bases.

Conclusions: the **Bilderburgers**, the **Council on Foreign Relations [CFR]** and the **Trilateral Commision** are the SECRET GOVERNMENT and rule this nation through **MJ-12** and the study group known as the **Jason Society**.

Throughout history the aliens have manipulated and/or ruled the human race through various secret societies, religion and the occult. **The CFR and the Trilateral Commision are in complete control of the alien technology and the nation's economy**. Eisenhower was the last president to know the entire overview of the alien problem. Succeeding presidents were told only what MJ-12 wanted them to know, and it was NOT the truth. MJ-12 presented each new President with a picture of a lost alien culture seeking to renew itself, build a home on this planet and shower us with gifts of technology. Each president has bought the story hook, line, and sinker. Meanwhile, innocent people continue to suffer unspeakable horrors at the hands of alien and human scientists who are engaged in barbarous research that would make the Nazis pale in comparison. As if that is not enough, **many people end up as food for the insatiable alien appetite** for biological enzymes, hormonal secretions and blood. At least **1 in every 40 Americans** have been **implanted with alien devices**that are used to control them if necessity calls.

By 1989 **over 3 million 'Greys'** are occupying these deep multi-level underground complexes. Level 7 at **Dulce** is called "Nightmare Hall". They have welched on their agreement on abducting humans; today over **25 million citizens** have been abducted and implanted, a literal army awaiting orders to march! (Whitley Strieber has written best selling on his personal experience as have many others).

For this reason other nations were informed. Within 5 months the communist monolith Russia was dismantled to unite with the U.S. and it's technology to fight the invasion. The Hubble Space Telescope was created to keep a watchful eye on the invasion fleet; Star Wars technology has been developed to hopefully stop them in outer space before they can get to the earth.

Today, the government is on the horns of a dilemma. Too may sources are releasing alien information. The public could get angry at continued secrecy. So MJ-12 plans soon to make an "Official" announcement, under controlled conditions, probably Area 51. Network TV will be called to meet the ***staged* 'landing' of the aliens**, these being the **Greys**. They will come **bearing gifts**, technology that supposedly will heal Cancer and AIDS, retard aging, etc. They will tell us they are 'saviors of humanity' who have come **to defend the earth** against an invasion of man-eating aliens called Reptoids.

This story is a LIE, *they already work for the Reptoids* [reptilian aliens]! ***Their plan is to unify the world into a One-world Government***, a 'New World Order' with the argument that only this can defeat the invasion by Reptoids. This is a trap to enslave the world's population. Control will be **accomplished through the money system, a universal currency controlled by certain international bankers**, who for years have been lackeys of the aliens, who seized upon their greed and lust for wealth and power as a means to bring about their evil plan to control the earth. (This also being the scenario predicted in the Bible's 'Book of Revelation' wherein only those who accept the Mark of the Beast (the aliens being the 'Beast' and the 'Mark' being some sort of laser tattoo or Credit Card they will use, which will allow people to buy and sell goods). Those who do not accept this 'Mark' must live outside the money system and survive somehow on their own, through barter etc.

SO BE AWARE! ONLY YOUR KNOWLEDGE OF THIS FAKE INVASION AND FAKE RAPTURE CAN PREVENT IT FROM HAPPENING. DEMAND THE TRUTH FROM YOUR GOVERNMENT. TELL THEM YOU KNOW ABOUT THE ALIENS AND THAT THERE ARE GOOD ALIENS AND BAD ALIENS AND **THAT MJ-12 IS PROMOTING THE BAD ALIENS AND THE ONE WORLD GOVERNMENT THEY HOPE TO CONTROL.**

More on Project Blue Beam
Jesus is Coming-Kill the Enemies of God

http://educate-yourself.org/cn/projectbluebeamrelatedA01feb99.shtml
Feb. 1, 1999
http://www.washingtonpost.com/wp-srv/national/dotmil/arkin020199.htm

When Seeing and Hearing Isn't Believing
By William M. Arkin Special to washingtonpost.com
Monday, Feb. 1, 1999

'Gentlemen! We have called you together to inform you that we are going to overthrow the United States government.' So begins a statement being delivered by Gen. Carl W. Steiner, former Commander-in-chief, U.S. Special Operations Command. At least the voice sounds amazingly like him. But it is not Steiner. It is the result of **voice 'morphing' technology** developed at the Los Alamos National Laboratory in New Mexico.

By taking just a 10-minute digital recording of Steiner's voice, scientist George Papcun is able, in near real time, to clone speech patterns and develop an accurate facsimile. Steiner was so impressed, he asked for a copy of the tape. Steiner was hardly the first or last victim to be spoofed by Papcun's team members. To refine their method, they took various high quality recordings of generals and experimented with creating fake statements. One of the most memorable is Colin Powell stating 'I am being treated well by my captors.' 'They chose to have him say something he would never otherwise have said,' chuckled one of Papcun's colleagues.

A Box of Chocolates is Like War

Most Americans were introduced to the tricks of the digital age in the movie *Forrest Gump*, when thecharacter played by Tom Hanks appeared to shake hands with President Kennedy. For Hollywood, it is special effects. For covert operators in the U.S. military and intelligence agencies, it is a weapon of the future. [A weapon to be used against ANYONE who is considered ENEMY OF THE STATE]

'Once you can take any kind of information and reduce it into ones and zeros, you can do some pretty interesting things,' says Daniel T. Kuehl, chairman of the Information Operations department of the National Defense University in Washington, the military's school for information warfare. Digital morphing - voice, video, and photo - has come of age, available for use in psychological operations. PSYOPS, as the military calls it, seek to exploit human vulnerabilities in enemy governments, militaries and populations to pursue national and battlefield objectives.

To some, PSYOPS is a backwater military discipline of leaflet dropping and radio propaganda. To a growing group of information war technologists, it is the nexus of fantasy and reality. Being able to manufacture convincing audio or video, they say, might be the difference in a successful military operation or coup.ÊÊ [Your head on Lee Harvey Oswald's body - you ARE guilty and a jury of YOUR PEERS will convict YOU 'for them'!]

Allah on the Holodeck

Pentagon planners started to discuss digital morphing after Iraq's invasion of Kuwait in 1990.

Covert operators kicked around the idea of creating a computer-faked videotape of Saddam Hussein crying or showing other such manly weaknesses, or in some sexually compromising situation. The nascent plan was for the tapes to be flooded into Iraq and the Arab world.[NO - they did it DURING DESERT STORM - see DSWCC 'The voice of God'] The tape war never proceeded, killed, participants say, by bureaucratic fights over jurisdiction,
skepticism over the technology, and concerns raised by Arab coalition partners. [BUZZZ - it proceeded, tested - perfected.] But the 'strategic' PSYOPS scheming didn't die. What if the U.S. projected a holographic image of Allah floating over Baghdad urging the Iraqi people and Army to rise up against Saddam, a senior Air Force officer asked in 1990? According to a military physicist given the task of looking into the hologram idea, the feasibility had been established of projecting large, three-dimensional objects that appeared to float in the air. But doing so over the skies of Iraq? To project such a hologram over Baghdad on the order of several hundred feet, they calculated, would take a mirror more than a mile square in space, as well as huge projectors and power sources. And besides, investigators came back, what does Allah look like?

The Gulf War hologram story might be dismissed were it not the case that washingtonpost.com has learned that a super secret program was established in 1994 to pursue the very technology for PSYOPS application. The '**Holographic Projector**' is described in a classified Air Force document as a system to 'project information power from space ... for special operations deception missions.'
War is Like a Box of Chocolates
Voice-morphing? Fake video? Holographic projection? They sound more like Mission Impossible and Star Trek gimmicks than weapons. Yet for each, there are corresponding and growing research efforts as the technologies improve and offensive information warfare expands. Whereas early voice morphing required cutting and pasting speech to put letters or words together to make a composite, Papcun's software developed at Los Alamos can far more accurately replicate the way one actually speaks. Eliminated are the robotic intonations. The irony is that after Papcun finished his speech cloning research, there were no takers in the military. Luckily for him, Hollywood is interested: The promise of creating a virtual Clark Gable is mightier than the sword. Video and photo manipulation has already raised profound questions of authenticity for the journalistic world. With audio joining the mix, it is not only journalists but also privacy advocates and the conspiracy-minded who will no doubt ponder the worrisome mischief that lurks in the not too distant future. 'We already know that seeing isn't necessarily believing,' says Dan Kuehl, 'now I guess hearing isn't either.' William M. Arkin, author of 'The U.S. Military Online,' is a leading expert on national security and the Internet. He lectures and writes on nuclear weapons, military matters and information warfare. An Army intelligence analyst from 1974-1978, Arkin currently consults for Washingtonpost.Newsweek Interactive, MSNBC and the Natural Resources Defense Council.ÊÊ
GET READY: Emails re-arranged to seem like a death or bomb threat, your telephone conversations re-arranged after you use words to describe a movie you saw and over 'time' with ECHELON recording your conversations, they will have your vocabulary of words in YOUR VOICE and now when they want to prosecute you of a crime THEY COMMIT - suddenly they can have audio recordings and video footage of you being in some location and
the jury hear you say what your enemies want them to hear. GUILTY - OFF WITH HIS HEAD, DEATH! A jury of your peers will believe and convict you. We are coming full in this civilization where all deception will become the way of life, all lies will become truth, and truth will no longer exist. IT WILL BE TOTAL ILLUSION NOW OVERT based on Evil. DSWCC > http://www.nonwo.com/dswcc/

Introducing Project Blue Beam Patrol
In cooperation with TRW Space and Technology, NASA and other world space agencies, the Bilderberg group has developed a series of three stationary satellites with advanced laser technology that enable them to project holographic images onto the earth's surface from outer space!

This amazing technology allows Project Blue Beam Patrol to create holographic decoys of Police

Officers that will patrol our city streets along with and among our own finest. The criminals will not be able to tell which are the real officers and which are the holograms.

BLUE BEAM PROJECT
by Jim Seabourn (crtisad@inland.net)
8/19/98
This is an article from CONTACT! [August 11, 1998-page 8-9]
Phone 1-800-800-5565.

WHAT IS THE 'BLUE BEAM PROJECT'?
From the INTERNET, courtesy of Calvin Burgin, wrldline@texas.net>
7/29/98:

It involves two things. A technologically simulated 'second coming' and the re-emergence of the new 'MONTAUK'-type projects that have the ability to take up a whole bunch of people as in a 'rapture' type of situation and whisk the whole bunch into never-never land. Ironically, portions of the holographic projections have the potential for changing the planet into oneness with God. Unfortunately, this operates on the premise that Man shall somehow become God in human form and control other Men and dictate all actions and thoughts.

The calculated resistance to the new religion, the New World Order and the new 'Messiah' will entail human loss on a massive scale in the ensuing 'holy wars'. The 'BLUE BEAM PROJECT' will pretend to be the universal fulfillment of the prophecies of old; as major an event as that which took place 2000 years ago. In principle, it will make use of the sky as a holographic projection screen for space-based laser-generating satellites [star wars]. These projectors will project simultaneous images to the four corners of the planet, in every language by region. It deals with the religious aspect of the New World Order. The system has already been tested. Holographic projections of the 'Christ Image' have already been seen in some remote desert areas. These have only been reported in tabloid papers, so they are instantly rendered moot. They can also project images of aliens, monsters, angels - you name it. Computers will coordinate the satellites and software will run the show-and-tell. Holography is based on very nearly identical signals combining to produce image, or hologram, with depth perception. This is equally applicable to acoustic [ELF, VLF, LF] waves as it is optical phenomena. Specifically, the 'show' will consist of laser projections of multiple holographic images to different parts of the planet, each receiving different images according to the predominating regional religious faith. Not a single area will be excluded. With computer animation and sound effects appearing to come from the depths of space, astonished followers of the various creeds will witness their own returned Messiah in spectacularly convincing lifelike realness.

The various images of Christ, Mohammed, Buddha, Krishna, etc., will merge into ONE after 'correct explanation' of the mysteries, prophecies and revelations are disclosed. This 'ONE GOD' will in fact function as the Anti-Christ', who will 'explain' that the various scriptures 'have been misunderstood' - that the religious of old are responsible for turning brother against brother, nation against nation - that the religions of the world must be abolished to make way for the GOLDEN AGE [NEW AGE] of the One World Religion, representing the One God they see before them.

Naturally, this superbly staged, full-scale production will result in social and religious disorder on a massive scale. Wonder what the television transmitters of religious networks will be doing on that day? But before all this, they have to go through four different steps in order to get to Project Blue Beam.

1: The first step concerns the breakdown of all archaeological knowledge. It deals with **staging earthquakes at certain precise locations** around the planet where supposed new 'discoveries' will finally explain [for them] that the meaning of the basic doctrines of all the world's major religions are 'wrong'. This falsification will be used to make the population believe that all religious doctrine has been misunderstood and misinterpreted. The falsification started with the film *2001: A Space Odyssey*, the TV-series STAR TREK, the INDEPENDENCE DAY film, E.T., all of which deal with space 'invasion' and 'protection'. JURASSIC PARK was to push the theory of evolution.

2: The second step deals with the **gigantic space show**: 3D optical holograms and sounds, laser projections of multiple holographic images in different parts of the world, each receiving a different image, according to its predetermined original national religious faith. This new 'god' image will talk in all languages. As an example, the Soviets have manufactured the advanced computers and have programmed them with the minute psychological particles based upon their studies of the anatomy and biology of the human body, as well as their studies on the anatomy, chemistry and electricity of the human brain. These computers have also been fed with the different languages of the world.

3: The third step deals with the telepathic electronic two-way communications, where ELF [Extra Low Frequency], VLF [Low Frequency] waves will reach the people of the Earth through the insides of their brains, making each person believe that his own God is speaking to him from within his own soul. Such rays, from satellites, are fed from the memory of computers that store much data about the human being and his languages. These rays will then interlace and interweave with the natural thinking processes to form what we call the ARTIFICIAL TALK.

4: The fourth step involves universal supernatural manifestations using electronic means. This step contains three different orientations:

The first one is to make mankind believe that an alien invasion is about to occur upon every major city on the Earth. This is to push each major nation into using its nuclear capability to strike back. In this manner, it would put each of these nations in a state of full disarmament before the United Nations after the false attack.

The second is to make the 'Christian' believe that a major rapture is occurring, with a simple 'played' divine intervention of an alleged 'good' alien force coming to save the good people from a brutal satanic attack. Its goal is to get rid of all significant opposition to the NEW WORLD ORDER. The third orientation is a mixture of electronic and supernatural forces. The waves [frequencies] used at that time will allow supernatural forces through fiber optics cable, coaxial cable, electric and telephone lines in order to penetrate all electronic equipment and appliances that will by then all have a special microchip installed. The goal of this step deals with the materialization of satanic ghosts, spectres, and poltergiests all across the globe in order to push all populations to the edge of a wave of suicide, killing and permanent psychological disorder.

After that night of the THOUSAND STARS, HUMANITY IS BELIEVED TO BE READY FOR THEM TO ENTER IN A 'NEW MESSIAH' TO REESTABLISH PEACE EVERYWHERE AT ANY COST, EVEN AT THE COST OF FREEDOM.

NOTICE FROM WILLIAM KERN: The report above was pirated from Serge Monast who was killed while researching Project Blue Beam. Any copyright of this material belongs to Serge Monast or his family, NOT Cornell University. See Blue Beam Part 1.

'David Esur' - a military soldier who actually released secrets from the NSA (it is believed). Last reported as 'he is worried for his life' because of releasing it, he has disappeared from my email list. But then again, I never really was able to contact him to begin with - he contacted me, once. He released: 'Subliminal Implanted Posthypnotic Suggestions and Scripts Using Acoustically Delivered and Phonetically Accelerated Posthypnotic Commands without Somnambulistic Preparation in the Subject for Intelligence and Counterintelligence Applications by the United States National Security Agency.' I think he disappeared....like Ross Adey.... and I think that the writer of the article below, Timothy Thomas, may have too. But who knows? Foreign Military Studies Office 101 Meade Ave Fort Leavenworth, KS 66027-1351

WARNING! The views expressed in FMSO publications and reports are those of the authors and do not necessarily represent the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

The Mind Has No Firewall

Mr. Timothy L. Thomas Foreign Military Studies Office,
Fort Leavenworth, KS.

This article first appeared in the Spring 1998 issue of *Parameters*

'It is completely clear that the state which is first to create such weapons will achieve incomparable superiority.' -Major I. Chernishev, Russian Army.

1 The human body, much like a computer, contains myriad data processors. They include, but are not limited to, the chemical-electrical activity of the brain, heart, and peripheral nervous-system, the signals sent from the cortex region of the brain to other parts of our body, the tiny hair-cells in the inner ear that process auditory signals, and the light-sensitive retina and cornea of the eye that

process visual activity.
2 We are on the threshold of an era in which these data processors of the human body may be manipulated or debilitated. Examples of unplanned attacks on the body's data-processing capability are well-documented. Strobe-lights have been known to cause epileptic seizures. Not long ago in Japan, children watching television cartoons were subjected to pulsating lights that caused seizures in some and made others very sick.

Defending friendly and targeting adversary data-processing capabilities of the body appears to be an area of weakness in the US approach to information warfare theory, a theory oriented heavily toward systems data processing and designed to attain information dominance on the battlefield. Or so it would appear from information in the open, unclassified press. This US shortcoming may be a serious one, since the capabilities to alter the data processing systems of the body already exist. A recent edition of U.S. News and World Report highlighted several of these 'wonder weapons' (acoustics, microwaves, lasers) and noted that scientists are 'searching the electromagnetic and sonic spectrums for wavelengths that can affect human behavior.'
3 A recent Russian military article offered a slightly different slant to the problem, declaring that 'humanity stands on the brink of a psychotropic war' with the mind and body as the focus. That article discussed Russian and international attempts to control the psycho-physical condition of man and his decision making processes by the use of VHF-generators, 'noiseless cassettes,' and other technologies. An entirely new arsenal of weapons, based on devices designed to introduce subliminal messages or to alter the body's psychological and data processing capabilities, might be used to incapacitate individuals. These weapons aim to control or alter the psyche, or to attack the various sensory and data-processing systems of the human organism. In both cases, the goal is to confuse or destroy the signals that normally keep the body in equilibrium. This article examines energy-based weapons, psychotropic weapons, and other developments designed to alter the ability of the human body to process stimuli. One consequence of this assessment is that the way we commonly use the term 'information warfare' falls short when the individual soldier, not his equipment, becomes the target of attack.

Information Warfare Theory and the Data-Processing Element of Humans

In the United States the common conception of information warfare focuses primarily on the capabilities of hardware systems such as computers, satellites, and military equipment which process data in its various forms. According to Department of Defense Directive S-3600. 1 of 9 December 1996, information warfare is defined as 'an information operation conducted during time of crisis or conflict to achieve or promote specific objectives over a specific adversary or adversaries.' An information operation is defined in the same directive as 'actions taken to affect adversary information and information systems while defending one's own information and information systems.' These 'information systems' lie at the heart of the modernization effort of the US armed forces and other countries, and manifest themselves as hardware, software, communications capabilities, and highly trained individuals.

Recently, the US Army conducted a mock battle that tested these systems under simulated combat conditions. US Army Field Manual 101-5-1, Operational Terms and Graphics (released 30 September 1997), defines information warfare as 'actions taken to achieve information superiority by affecting a hostile's information, information based-processes, and information systems, while defending one's own information, information processes, and information systems.' The same manual defines information operations as a 'continuous military operation within the military information environment that enables, enhances, and protects friendly forces' ability to collect, process, and act on information to achieve an advantage across the full range of military operations. [Information operations include] interacting with the Global Information Environment . . . and exploiting or denying an adversary's information and decision capabilities.'
4 This 'systems' approach to the study of information warfare emphasizes the use of data, referred to as information, to penetrate an adversary's physical defenses that protect data (information) in order to obtain operational or strategic advantage. It has tended to ignore the role of the human body as an information- or data-processor in this quest for dominance except in those cases where an individual's logic or rational thought may be upset via disinformation or deception. As a consequence little attention is directed toward protecting the mind and body with a firewall as we have done with hardware systems. Nor have any techniques for doing so been prescribed. Yet the body is capable not only of being deceived, manipulated, or misinformed but also shut down or destroyed - just as any other data-processing system. The 'data' the body receives from external sources - such as electromagnetic, vortex, or acoustic energy waves - or creates through its own electrical or chemical stimuli can be manipulated or changed just as the data (information) in any hardware system can be altered. The only body-related information warfare element considered by the United States is psychological operations (PSYOP). In Joint Publication 3-13. 1, for example, PSYOP is listed as one of the elements of command and control warfare. The publication notes that 'the ultimate target of [information warfare] is the information dependent process, whether human or automated .... Command and control warfare (C2W) is an application of information warfare in military operations.... C2W is the integrated use of PSYOP, military deception, operations security, electronic warfare and physical destruction.'
5 One source defines information as a 'non-accidental signal used as an input to a computer or communications system.'
6 The human body is a complex communication system constantly receiving non-accidental and accidental signal inputs, both external and internal. If the ultimate target of information warfare is the information-dependent process, 'whether human or automated,' then the definition in the joint publication implies that human data-processing of internal and external signals can clearly be considered an aspect of information warfare. Foreign researchers have noted the link between humans as data processors and the conduct of information warfare. While some study only the

PSYOP link, others go beyond it. As an example of the former, one recent Russian article described offensive information warfare as designed to 'use the Internet channels for the purpose of organizing PSYOP as well as for 'early political warning' of threats to American interests.'

7 The author's assertion was based on the fact that 'all mass media (especially TV "programming" - JAH) are used for PSYOP . . . [and] today this must include the Internet.' The author asserted that the Pentagon wanted to use the Internet to 'reinforce psychological influences' during special operations conducted outside of US borders to enlist sympathizers, who would accomplish many of the tasks previously entrusted to special units of the US armed forces. Others, however, look beyond simple PSYOP ties to consider other aspects of the body's data-processing capability. One of the principal open source researchers on the relationship of information warfare to the body's data-processing capability is Russian Dr. Victor Solntsev of the Baumann Technical Institute in Moscow. Solntsev is a young, well-intentioned researcher striving to point out to the world the potential dangers of the computer operator interface. Supported by a network of institutes and academies, Solntsev has produced some interesting concepts.

8 He insists that man must be viewed as an open system instead of simply as an organism or closed system. As an open system, man communicates with his environment through information flows and communications media. One's physical environment, whether through electromagnetic, gravitational, acoustic, or other effects, can cause a change in the psycho-physiological condition of an organism, in Solntsev's opinion. Change of this sort could directly affect the mental state and consciousness of a computer operator. This would not be electronic war or information warfare in the traditional sense, but rather in a non-traditional and non-US sense. It might encompass, for example, a computer modified to become a weapon by using its energy output to emit acoustics that debilitate the operator. It also might encompass, as indicated below, futuristic weapons aimed against man's 'open system.' Solntsev also examined the problem of 'information noise,' which creates a dense shield between a person and external reality. This noise may manifest itself in the form of signals, messages, images, or other items of information.

The main target of this noise would be the consciousness of a person or a group of people. Behavior modification could be one objective of information noise; another could be to upset an individual's mental capacity to such an extent as to prevent reaction to any stimulus. Solntsev concludes that all levels of a person's psyche (subconscious, conscious, and 'super-conscious') are potential targets for destabilization. According to Solntsev, one computer virus capable of affecting a person's psyche is Russian Virus 666. It manifests itself in every 25th frame of a visual display, where it produces a combination of colors that allegedly put computer operators into a trance. The subconscious perception of the new pattern eventually results in arrhythmia of the heart. Other Russian computer specialists, not just Solntsev, talk openly about this '25th frame effect' and its ability to subtly manage a computer user's perceptions. The purpose of this technique is to inject a thought into the viewer's subconscious. It may remind some of the subliminal advertising controversy in the United States in the late 1950s.

US Views on 'Wonder Weapons': Altering the Data-Processing Ability of the Body

What technologies have been examined by the United States that possess the potential to disrupt the data-processing capabilities of the human organism? The 7 July 1997 issue of U.S. News and World Report described several of them designed, among other things, to vibrate the insides of humans, stun or nauseate them, put them to sleep, heat them up, or knock them down with a shock wave. 9 The technologies include dazzling lasers that can force the pupils to close; acoustic or sonic frequencies that cause the hair-cells in the inner ear to vibrate and cause motion-sickness, vertigo, and nausea, or frequencies that resonate the internal organs causing pain and spasms; and shock-waves with the potential to knock down humans or airplanes and which can be mixed with pepper-spray or chemicals.

10 With modification, these technological applications can have many uses. Acoustic weapons, for example, could be adapted for use as acoustic rifles or as acoustic fields that, once established, might protect facilities, assist in hostage rescues, control riots, or clear paths for convoys. These waves, which can penetrate buildings, offer a host of opportunities for military and law enforcement officials. Microwave weapons, by stimulating the peripheral nervous-system, can heat up the body, induce epileptic-like seizures, or cause cardiac-arrest. Low-frequency radiation affects the electrical activity of the brain and can cause flu-like symptoms and nausea. Other projects sought to induce or prevent sleep, or to affect the signal from the motor cortex portion of the brain, overriding voluntary muscle movements. The latter are referred to as pulse-wave weapons, and the Russian government has reportedly bought over 100,000 copies of the 'Black Widow' version of them.

11 However, this view of 'wonder weapons' was contested by someone who should understand them. Brigadier General Larry Dodgen, Deputy Assistant to the Secretary of Defense for Policy and Missions, wrote a letter to the editor about the 'numerous inaccuracies' in the U.S. News and World Report article that 'misrepresent the Department of Defense's views.'

12 Dodgen's primary complaint seemed to have been that the magazine misrepresented the use of these technologies and their value to the armed forces. He also underscored the US intent to work within the scope of any international treaty concerning their application, as well as plans to abandon (or at least redesign) any weapon for which countermeasures are known. One is left with the feeling, however, that research in this area is intense. A concern not mentioned by Dodgen is that other countries or non-state actors may not be bound by the same constraints. It is hard to imagine someone with a greater desire than terrorists to get their hands on these technologies. 'Psycho-terrorism' could be the next buzzword.

Russian Views on 'Psychotropic War'

The term 'psycho-terrorism' was coined by Russian writer N. Anisimov of the Moscow Anti-Psychotronic Center. According to Anisimov, psychotropic weapons are those that act to 'take away a part of the information which is stored in a man's brain. It is sent to a computer, which reworks it to the level needed for those who need to control the man, and the modified information is then reinserted into the brain.' These weapons are used against the mind to induce hallucinations, sickness, mutations in human cells, 'zombification,' or even death. Included in the arsenal are VHF generators, X-rays, ultrasound, and radio waves. Russian army Major I. Chernishev, writing in the military journal Orienteer in February 1997, asserted that 'psy' weapons are under development all over the globe. Specific types of weapons noted by Chernishev (not all of which have prototypes) were: A psychotropic generator, which produces a powerful electromagnetic emanation capable of being sent through telephone lines, TV, radio networks, supply pipes, and incandescent lamps. An autonomous generator, a device that operates in the 10-150 Hertz band, which at the 10-20 Hertz band forms an infrasonic oscillation that is destructive to all living creatures. A nervous system generator, designed to paralyze the central nervous systems of insects, which could have the same applicability to humans. Ultrasound emanations, which one institute claims to have developed. Devices using ultrasound emanations are supposedly capable of carrying out bloodless internal operations without leaving a mark on the skin. They can also, according to Chernishev, be used to kill.

Noiseless cassettes.
Chernishev claims that the Japanese have developed the ability to place infra-low frequency voice patterns over music, patterns that are detected by the subconscious. Russians claim to be using similar 'bombardments' with computer programming to treat alcoholism or smoking.

The 25th-frame effect, alluded to above, a technique wherein each 25th frame of a movie reel or film footage contains a message that is picked up by the subconscious. This technique, if it works, could possibly be used to curb smoking and alcoholism, but it has wider, more sinister applications if used on a TV audience or a computer operator. Psychotropics, defined as medical preparations used to induce a trance, euphoria, or depression. Referred to as 'slow-acting mines,' they could be slipped into the food of a politician or into the water supply of an entire city. Symptoms include headaches, noises, voices or commands in the brain, dizziness, pain in the abdominal cavities, cardiac arrhythmia, or even the destruction of the cardiovascular system.
There is confirmation from US researchers that this type of study is going on. Dr. Janet Morris, co-author of *The Warrior's Edge*, reportedly went to the Moscow Institute of Psycho correlations in 1991. There she was shown a technique pioneered by the Russian Department of Psycho-Correction at Moscow Medical Academy in which researchers electronically analyze the human mind in order to influence it. They input subliminal command messages, using key words transmitted in 'white noise' or music. Using an infra-sound, very low frequency transmission, the acoustic psycho-correction message is transmitted via bone conduction.
13 In summary, Chernishev noted that some of the militarily significant aspects of the 'psy' weaponry deserve closer research, including the following non-traditional methods for disrupting

the psyche of an individual: ESP research: determining the properties and condition of objects without ever making contact with them and 'reading' peoples' thoughts Clairvoyance research: observing objects that are located just beyond the world of the visible - used
for intelligence purposes Telepathy research: transmitting thoughts over a distance - used for covert operations Telekinesis research: actions involving the manipulation of physical objects using thought power, causing them to move or break apart - used against command and control systems, or to disrupt the functioning of weapons of mass destruction Psychokinesis research: interfering with the thoughts of individuals, on either the strategic or tactical level

While many US scientists undoubtedly question this research, it receives strong support in Moscow. The point to underscore is that individuals in Russia (and other countries as well) believe these means can be used to attack or steal from the data-processing unit of the human body. Solntsev's research, mentioned above, differs slightly from that of Chernishev. For example, Solntsev is more interested in hardware capabilities, specifically the study of the information-energy source associated with the computer-operator interface. He stresses that if these energy sources can be captured and integrated into the modern computer, the result will be a network worth more than 'a simple sum of its components.' Other researchers are studying high-frequency generators (those designed to stun the psyche with high frequency waves such as electromagnetic, acoustic, and gravitational); the manipulation or reconstruction of someone's thinking through planned measures such as reflexive control processes; the use of psychotronics, parapsychology, bioenergy, bio fields, and psycho energy;

14 and unspecified 'special operations' or anti-ESP training. The last item is of particular interest. According to a Russian TV broadcast, the strategic rocket forces have begun anti-ESP training to ensure that no outside force can take over command and control functions of the force. That is, they are trying to construct a firewall around the heads of the operators.

Conclusions

At the end of July 1997, planners for Joint Warrior Interoperability Demonstration '97 'focused on technologies that enhance real-time collaborative planning in a multinational task force of the type used in Bosnia and in Operation Desert Storm.

The JWID '97 network, called the Coalition Wide Area Network (CWAN), is the first military network that allows allied nations to participate as full and equal partners.'

15 The demonstration in effect was a trade fair for private companies to demonstrate their goods; defense ministries got to decide where and how to spend their money wiser, in many cases without incurring the cost of prototypes. It is a good exampleof doing business better with less.

Technologies demonstrated included:

16 Soldiers using laptop computers to drag cross-hairs over maps to call in air strikes Soldiers carrying beepers and mobile phones rather than guns Generals tracking movements of every unit, counting the precise number of shells fired around the globe,and inspecting real-time damage

inflicted on an enemy, all with multicolored graphics

17 Every account of this exercise emphasized the ability of systems to process data and provide information feedback via the power invested in their microprocessors. The ability to affect or defend the data-processing capability of the human operators of these systems was never mentioned during the exercise; it has received only slight attention during countless exercises over the past several years. The time has come to ask why we appear to be ignoring the operators of our systems. Clearly the information operator, exposed before a vast array of potentially immobilizing weapons, is the weak spot in any nation's military assets. There are few international agreements protecting the individual soldier, and these rely on the good will of the combatants. Some nations, and terrorists of every stripe, don't care about such agreements.

This article has used the term data-processing to demonstrate its importance to ascertaining what so-called information warfare and information operations are all about. Data-processing is the action this nation and others need to protect. Information is nothing more than the output of this activity. As a result, the emphasis on information-related warfare terminology ('information dominance,' 'information carousel') that has proliferated for a decade does not seem to fit the situation before us. In some cases the battle to affect or protect data-processing elements pits one mechanical system against another. In other cases, mechanical systems may be confronted by the human organism, or vice versa, since humans can usually shut down any mechanical system with the flip of a switch. In reality, the game is about protecting or affecting signals, waves, and impulses that can influence the data-processing elements of systems, computers, or people. We are potentially the biggest victims of information warfare, because we have neglected to protect ourselves.

Our obsession with a 'system of systems,' 'information dominance,' and other such terminology is most likely a leading cause of our neglect of the human factor in our theories of information warfare. It is time to change our terminology and our conceptual paradigm. Our terminology is confusing us and sending us in directions that deal primarily with the hardware, software, and communications components of the data-processing spectrum. We need to spend more time researching how to protect the humans in our data management structures. Nothing in those structures can be sustained if our operators have been debilitated by potential adversaries or terrorists who - right now - may be designing the means to disrupt the human component of our carefully constructed notion of a system of systems.

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The Goals of Project Blue Beam
http://educate-yourself.org/cn/projectbluebeamintoandnworeview.shtml
The Project Blue Beam/British Israel Brain Wash from the Islamic Side (July 5, 2006)
http://educate-yourself.org/lte/islamicbrainwash05jul06.shtml

1994 Serge Monast Talk Explaining NASA's Project Blue Beam

http://educate-yourself.org/cn/sergemonast1994transcript.shtml
ca. 1994
1994 Serge Monast Transcript Explaining NASA's Project Blue Beam (April 15, 2010)
http://www.sweetliberty.org/issues/hoax/bluebeam.htm
[Introductory Notes]

Following is the transcript of a taped presentation by Serge Monast, a French-speaking Canadian journalist. Although there was no date on the tape, Monast speaks of 1983 as "eleven years ago", so we will assume this talk took place in 1994. We heard rumors from time to time of harassment against Mr. Monast, and later had heard that he was killed. That is an unconfirmed (by us) report. Because the tape from which we transcribed was not of high quality, and along with the very heavy French accent, we were unable to make out some of the words. We had to guess at the spelling of some of the names. If -- as you read -- you find words incorrectly spelled or can fill in any of the gaps, please contact me.

I've decided to transcribe this tape because the information relates to events occurring today. The projected time-line was off target, because Mr. Monast expected the plan to be fulfilled by the year 2,000... as did many.

He also indicated during the presentation that the planners had originally set the date for 1983. That could explain the title of George Orwell's book, *1984*.

The date 1984 ('85) also jives with information presented to a special Legislative Committee in Illinois in 1978 studying the effects of Regionalism on the State, by a gentleman who testified that:

> he was a former secret courier for the National Security Agency;

the 'official position of the U.S. Government is to change this form of government to Socialism... via Regionalism'; and that;

> "the logic behind this is that when the new order takes place, which is scheduled around the **1985** period, that the representation for the committee that will sit on the world council will be very equal to the population of the European countries."

(speaking of intended numbers of populations in each region being limited to about 20 million each so no 'region' could ever effectively gain independence from the World Government).

Off the subject, yet not.. Regionalism is being sewed up nice and tightly right in our own back yards. . . local levels of government. Will you just 'let it happen'?

You will also want to read Betty Mill's Vision and Circles of Power, from **1991**. Betty knew of Project Blue Beam, although when she made the tape she did not know or know of Serge Monast. Betty went Home last January, where she is at peace from the awful ability - we never decided whether it was a gift or a curse - to see far beyond the illusion of what has been presented to the terrible intentions lurking behind the unfolding events. I dedicate to her with deep, deep love and gratitude - for her love for all of us, and her precious friendship and mentoring to me - this confirmation of her unearthly insight.

-- Jackie

NASA Project Blue Beam
By Serge Monast - 1994
http://educate-yourself.org/cn/projectbluebeam25jul05.shtml

Operation Blue Beam - Details Exposed
Please repost to you own mailing lists and newsgroups - Thanks)

Dear Citizens, Patriots, Veterans, et al:

Please read this incredible tale of apparations and modulated microwave images and sounds and voices directed into your brain, I was told today by those in the know that holographic images of tanks and war machinery were projected over the desert to the Iraqis to scare them into submission during Desert Storm. Looks like it worked quite effectively.

So there are two separate weapons. One projects images in the air while the other projects images into your mind. Every wonder why Buford Morrow the day care center killer checked himself into a psych-hospital prior to going on his rampage and claimed that he heard voices telling him to kill people. They would not listen to him.

USCMike1

This is from the International Free Press in Canada.

The International Free Press network is not a religious group, neither is it a political organization, but an independent worldwide investigation press agency in the field of politics, economics, medical and military.

We specialize in investigating and publishing special reports and audio tapes to expose the underworld of the United Nations conspiracy to implement a New World Order.

Our task is to make the people realize that the agenda of the New (aka jew) World Order is not a dream or some wild, paranoid theory; it is a real on-going Satanic project.

For what?

To abolish all Christian traditional religions in order to replace them with a one world religion based on the cult of man. To abolish all national identity and national pride in order to establish a world identity and a world pride.

To abolish the family as known today in order to replace them with individuals all working for the glory of the new one world government.

To destroy all individual artistic and scientific creativity to implement a one world government one-mind sight.

And that kind of declaration of war from the United Nations is for the implementation of a universal, obligatory membership to the United Nations, a strengthening of the UN by a multi- military and multi-police force, a world-wide justice department through the UN with an international tribunal, a worldwide new trade agreement for all nations, the end of cold war and

NASA PROJECT BLUE BEAM

2003 2004 2005

Also, a new world religion and a new culture for all men.

constitutions.

13 Feb 2004 - 16 Nov 2019
▾ About this capture

local wars as they are today, and the obligation for peace b

If we really wish to understand the NASA Blue Beam Project, we have to return to the "dawning of the age of Aquarius." Remember that song? That song said, "When the moon is in the seventh house and Jupiter aligned with Mars, then peace will guide our planet and love will steer the stars." This related with the year 1982 to be, at that time, the opening for the conspiracy of the age of Aquarius, just before the implementation of the new world order, supposed to begin sometime in 1983.

I have to say that the Blue Beam Project was set up for the year 1983. It has been delayed; we don't know exactly why. But, since 1983 (eleven years before the publication of this report), they have really improved themselves with new technology and innovations in space hardware and software in which they are involved right now to make their systems possible.

So, the goals of the new age movement under which the United Nations operates right now, are the implementation of a new world "messiah."

The tools of the new world order are,

1. an international army;
2. an international police force;
3. a world bank for the economy;
4. a world government under the United Nations;
5. a world conservatory bank for wilderness preservation around the world. That means all "green" movements will be melded into the new international bank or disappear altogether;
6. a world religion where all church doctrines will be destroyed at the roots to be replaced by the new world religion of the age of Aquarius;
7. the world seven-races classification for all human slaves who will fulfill predetermined work tasks whether they agree with it or not;
8. the world concentration headquarters at the United Nations for those who will not accept the new system;

9. the world agriculture and food supply control which will control food and vitamin supplies around the world.

The new world order will be an "in-between" government system for USSR, Great Britian and all its commonwealths, and the United States with its melting-pot population.

This is, at the end, a new spiritual and political world order which will replace the old ones under which we live right now.

What are the new world order plans?

They plan on the destruction of all people who believe in the Bible or worship Jesus Christ, and the complete disappearance of Christianity. To achieve this plan, the new world order is changing national laws to assure that Christian beliefs and symbols:- like the cross, for instance, will become outlawed and unlawful. Religious holidays and ceremonies will be replaced with new age festivities around the world.

The elimination and complete destruction of all secret societies and secret brotherhoods, lodges and sanctuaries, all of which they view as the most serious threats to their survival after the

The new world order also plans the abolition of all national curriencies, and the transfer of

13 Feb 2004 - 16 Nov 2019 2003 2004 2005 commerce to electronic cash through the superhighway.

implementation of the one world religion and one world government.

▾ About this capture

The thinkers and the basic doctrine of the new age conspiracies books are:

Elena Petrovna Blavatsky, who wrote "Isis Unveiled" and "The Secret Doctrine."

Alice A. Bailey who wrote "The Race and the Initiation and Externalization of the Heirarchy;" "Initiation: Human and Savior;" "The Reappearance of the Christ." (Their Christ is the new messiah). "The Destiny of the Nation," in which are plans for the disposition of the nation-states; "The Unfinished Autobiography;" "Disciplineship and the New Age;" "Esoteric Psychology."

These books are very important for new age thinkers who are exactly the ones who are conspiring to implement the New World Order.

Also, the writing of Nicola Roerich, who wrote, "Matraia," (that's their new messiah); "Shambala, The Resplendent," and "The Agni Yoga Series."

David Spangler who wrote, "Revelation: The Birth of a New Age," considered as the "bible" inside the new age movement; "Reflections on the Christ," which is related to the Luciferian initiation; "Links With Space," which maintains that off-world aliens are supposed to come to save earthlings from themselves; "Relationship and Identity," "The Love of Manifestation," "New Age Rifts," and "Toward a Planetary Vision," which is directly related to the visions of the new world order, as they plan it to be.

Now...what those people also plan - and I repeat, this is not a dream and is not paranoid thinking, this is real. They plan that in order to accept the new world order, all people must first accept the new age religion; to enter into the new world religion, the Christian will have to abdicate their own beliefs. So, as they said, the initiation will be on a worldwide basis inside the newly organized new Christian church (which will be a reorganized and strictly controlled Masonic temple) occult organization based on a Luciferian initiation. What we have to understand here is that no one will be able to maintain their old beliefs and, at the same time, enter into the new age religion. It will be impossible.

For those who will not accept the new world order, who will reject it, the new world order people have already built re-education concentration camps and, for those camps, they have established what they call the "rainbow classifications" of the new world order prisoners.

The rainbow is considered as the "bridge" leading to the Satanic empire of the new world order.

We already know, for instance, that everyone will have to take an oath to Lucifer in order to cross that bridge into the new age. All who resist that initiation will be sent to detention facilities where they will be separated into different categories, known as the rainbow classification of the new world order prisoners.

1. Classification of Christian children, as planned, is to be as human sacrifices where, within the black mass ceremonies, they will forced to participate in any kind of sexual orgies or be kept as sexual slaves.
2. Classification of prisoners to be used in medical experiments where drugs and new technologies will be tested on humans.
3. Classification of healthy prisoners for the International Organ Donation Center where vital organs will be removed one by one while they are kept alive by mechanical devices.

basically a worldwide dictatorship based upon the Luciferian religion; a 106 captures 13
13 Feb 2004 - 16 Nov 2019 2003 2004 2005 democracy, camps and slave labor will be hidden underground in massive colonies

dictatorship with the illusion of democracy. In order to maintain the illusion of

▾ About this capture

4. Classifiaction of all healthy underground worlkers

that are being built as we write this report.

5. Classification of "Uncertain Prisoners." In the international "re-education" center, political and religious prisoners will be re-educated (by whatever means are required) so that they may repent on international televison programs and glorify the virtues of the one world government for the benefit of all humanity.
6. Classification of the International Execution Center. Clear enough!
7. Classification seven. We are still waiting on the details of the Seventh Classification, and we are

awaiting verification of the colors to be assigned to these classifications of prisoners, but this is the basic agenda of those who have planned the new "paradise" world of the future.

You must understand that when I decided to release, about six months ago, some of their plans and information concerning their most important project, which is the NASA Blue Beam Project, I wasn't certain if I would survive my stand against the new world order's plans to put down on their knees all of the world's cultures and religions.

But, now, following my own Christian conscience, my real and deep love for all my unknown brothers and sisters in America and throughout the world, I freely accept to give my life if it has to be the case for the truth, for Jesus Christ, by releasing for the first time, the four major steps of the Satanic Blue Beam Project.

I ask everyone who reads the following descriptions not to be paralyzed by their natural fears but to spread to everyone the contents of this special report, and to gather together in order to pray and to think and to organize ways to survive the new world order government show-down and power taking, because what we have to understand is that the new world government will not be something permanent, immortal; this is not the case. But what we have to do right now is how to organize to survive such Satanic plans.

EDITOR'S NOTE:

The author of this report and his colleague were both killed only weeks apart; one in Canada and the other while visiting Ireland. Now we must carry on their work.

Originally Published 1994

[Note: **Serge Monast** [1945 - December 5, 1996] and another journalist, both of whom were researching Project Blue Beam, died of "heart attacks**"** within weeks of each other although neither

had a history of heart disease. Serge was in Canada. The other Canadian journalist was visiting Ireland. Prior to his death, the Canadian government abducted Serge's daughter in an attempt to dissuade him from pursuing his research into Project Blue Beam. **His daughter was never returned**. Pseudo-heart attacks are one of the alleged methods of death induced by Project Blue Beam.]
[Update from Ken Adachi: **February 17, 2009**: I'm only begininng to now fully grasp the entire breath of Serge Monast's contributions to humanity and the unbelieveable courage he demonstrated in coming out with these incredible revelations which were secretly or anonymously given to him by contrite politicians, military people, or intelligence people who still possessed a conscience and a sense of humanity.
A required companion piece to this article is an astoundingly accurate prophetic discourse presented by Serge in 1994 to the Canadian Free Press of Quebec, Canada. The plannned NASA/ Illuminati script that Serge revealed in that 1994 talk could be taken directly from today's headline news. The transcript of that talk is found here: http://educate-yourself.org/cn/sergemonast1994transcript.shtml
(ca. Dec 1996)
from: http://www.despatch.cth.com.au/Despatch/vol91_Concern.html

*A member of our accountability structure, Dorothy Dart, reports that a Canadian investigator into New Age globalism, SERGE MONAST, has died of a "heart attack." This man has faithfully exposed the New World Order for the last decade. His children were home-schooled, so the authorities took his eight year old daughter away, then his seven year old son was taken, as they said the parents were abusing them emotionally by stopping the children going to a State school. The father was then arrested, and spent the night in jail. **Next day** at home, he had a "heart attack." He was **46 years old**. This brave man has left a wife, who now has no family. Pray that she can get her little ones back. Our source said that the Canadian investigator, Serge Monast, wrote to her in Australia not long ago, saying he had been threatened many times, and did not except to survive.*]

NASA's Project Blue Beam
By Serge Monast (1994)
The infamous NASA [National Aeronautics and Space Administration] **Blue Beam Project** has **four different steps** in order to implement the new age religion with the Antichrist at its head. We must remember that the new age religion is the very foundation for the new world government, without which religion the dictatorship of the new world order is completely impossible. I'll repeat that: Without a universal belief in the new age religion, the success of the new world order will be impossible! That is why the Blue Beam Project is so important to them, but has been so well hidden until now.
Engineered Earthquakes & Hoaxed 'Discoveries'
The first step in the NASA Blue Beam Project concerns the breakdown [re-evaluation] of all

archaeological knowledge. It deals with the set-up, with artificially created earthquakes at certain precise locations on the planet, of **supposedly new discoveries** which will finally explain to all people the "error" of all fundamental religious doctrines. The falsification of this information will be used to make all nations believe that their religious doctrines have been misunderstood for centuries and misinterpreted. Psychological preparations for that first step have already been implemented with the film, '2001: A Space Odyssey;' the StarTrek series, and 'Independence Day;' all of which deal with invasions from space and the coming together of all nations to repel the invaders. The last films, 'Jurrassic Park,' deals with the theories of evolution, and claim God's words are lies. http://i.am/jah/evolut.htm

Hoaxed "Discoveries'
What is important to understand in the first step is that those earthquakes will hit at different parts of the world where scientific and archaeological teachings have indicated that arcane mysteries have been buried. By those types of earthquakes, it will be possible for scientists to rediscover those arcane mysteries which will be used to discredit all fundamental religious doctrines. This is the first preparation for the plan for humanity because **what they want to do is destroy the beliefs of all Christians and Muslims on the planet**. To do that, they **need some false 'proof' from the far past** that will prove to all nations that their religions have all been misinterpreted and misunderstood.
The Big Space Show in the Sky
The second step in the NASA Blue Beam Project involves a gigantic 'space show' with three-dimensional optical holograms and sounds, laser projection of multiple **holographic images** to different parts of the world, each receiving a different image according to predominating regional national religious faith. This new 'god's' voice will be speaking in all languages. In order to understand that, we must study various secret services' research done in the last 25 years. The Soviet's have perfected an advanced computer, even exported them, and fed them with the minute physio-psychological particulars based on their studies of the anatomy and electromechanical composition of the human body, and the studies of the electrical, chemical and biological properties of the human brain. These computers were fed, as well, with the languages of all human cultures and their meanings. The dialects of all cultures have been fed into the computers from satellite transmissions. The Soviets began to feed the computers with objective programs like the ones of the new messiah. It also seems that the Soviets - the new world order people - have resorted to suicidal methods with the human society by allocating electronic wavelengths for every person and every society and culture to induce suicidal thoughts if the person doesn't comply with the dictates of the new world order.

There are two different aspects of step two.
The first is the **'space show**.' Where does the space show come from? The space show, the

holographic images will be used in a simulation of the ending during which all nations will be shown scenes that will be the fulfillment of that which they desire to verify the prophecies and adversary events.

These will be projected from satellites onto the sodium layer about 60 miles above the earth. We see tests every once in a while, but they are called UFOs and "flying saucers" sightings.

The result of these deliberately staged events will be to show the world the new 'christ,' the new messiah, **Matraia** (Maitreya), for the immediate implementation of the new world religion. Enough truth will be foisted upon an unsuspecting world to hook them into the lie. "Even the most learned will be deceived."
The project has perfected the ability for some device [referred to as "tractor beams" by ufologists].to lift up an enormous number of people, as in a **Rapture**, and whisk the entire group into a never-never land *We see tests of this device in the abduction of humans by those mysterious little alien greys who snatch people out of their beds and through windows into waiting "mother ships.*"
The calculated resistance to the universal religion and the new messiah and the ensuing holy wars will result in the loss of human life on a scale never imagined before in all of human history.
The Blue Beam Project will pretend to be the universal fulfillment of the prophecies of old, as major an event as that which occurred 2,000 years ago. In principle, it will make use of the **skies as a movie screen** (on the sodium layer at about 60 miles) as **space-based laser-generating satellites project simultaneous images to the four corners of the planet in every language and dialect according to the region**. It deals with the religious aspect of the new world order and is deception and seduction on a massive scale.

Computers will coordinate the satellites and software already in place will run the sky show. Holographic images are based on nearly identical signals combining to produce an image or hologram with deep perspective which is equally applicable to acoustic ELF, VLF and LF waves and optical phenomena. Specifically, the show will consist of multiple holographic images to different parts of the world, each receiving a different image according to the specific national, regional religion. Not a single area will be excluded. With computer animation and sounds appearing to emanate from the very depths of space, astonished ardent followers of the various creeds will witness their own returned messiahs **in convincing lifelike reality**.

Then the projections of Jesus, Mohammed, Buddha, Krishna, etc., will merge into one after correct explanations of the mysteries and revelations will have been disclosed. This one god will, in fact, be the Antichrist, who will explain that the various scriptures have been misunderstood and misinterpreted, and that the religions of old are responsible for turning brother against brother, and nation against nation, therefore old religions must be abolished to make way for the new age new world religion, representing the one god Antichrist they see before them.

Naturally, this superbly staged falsification will result in dissolved social and religious disorder on a grand scale, each nation blaming the other for the deception, **setting loose millions of programmed religious fanatics** through demonic possession on a scale never witnessed before. In addition, **this event will occur at a time of profound worldwide political anarchy and general tumult created by some worldwide catastrophe**. The United Nation even now plans to use Beethovan's 'Song of Joy' as the anthem for the introduction for the new age one world religion. If we put this space show in parallel with the star wars program we get this: combination of electromagnetic radiation and hypnosis which have also been the subject of intensive research. In 1974, for instance, researcher G. F. Shapits, said of one of the research proposals that, '...in this investigation it will be shown that the spoken words of the hypnotist may also be converted by electromagnetic energy directly and to the subconscious part of the human brain without employing any mechanical device for receiving or transcording the message, and without the person exposed to such influence having a chance to control the information input consciously. It may be expected that the rationalized behavior will be considered to have been taken out of their own free will.'

Anyone investigating so-called 'channelling' phenomena right now would be wise to take this area of research into consideration. It will be noted that those who think of themselves as 'channellers' has escalated rapidly since this type of research was conducted. It is uncanny how similar their messages are, despite which entity they claim to be their source of divine guidance. It would suggest any individual considering the credibility of channelled information should be discerning and critically evaluate where the message they are receiving originates, and if the messages are specifically beneficial to the new world order.

The Sydney Morning newspaper published an item on March 21st, 1983 which announced that the Soviets were invading the human mind, the article having been submitted to the foreign editor by **Doctor Nathan Abnuengy**, assistant professor in the faculty of agriculture in Asia. It is worth quoting the article at length even though his grammar is a little old. This article relates to the Soviets who created the supercomputer we were discussing earlier and which is really important because these types of computers can be run through satellites and through space. The computers were fed with all the different languages and their meanings, the dialect of all peoples were fed to the computers with objective programs. But we are no longer talking about the Soviets; we are talking about the **United Nations**, the minions of the new world order, who are feeding the computers with the necessary information.

The editor of the column in which the article appeared even states that the piece made points too important to ignore. I think it is possible that the persons who have created this mega-mind-control-program could sell the software to an organization and not be aware that the client might use the program and data to enslave all of humankind. Just imagine how far they have advanced since that article was published!

Artificial Thought & Communication

The advancement of techniques propel us toward the third step in the Blue Beam Project that goes along with the telepathic and electronically augmented two-way communication where ELF, VLF and LF waves will reach each person from within his or her own mind, convincing each of them that their own god is speaking to them from the very depths of their own soul. Such rays from satellites are fed from the memories of computers that have stored massive data about every human on earth, and their languages. The rays will then interlace with their natural thinking to form what we call diffuse artificial thought.

That kind of technology goes into the 1970s, 1980s, and 1990s research where the human brain has been compared to a computer. Information is fed in, processed, integrated and then a response is formulated and acted upon. Mind controllers manipulate information the same way a computer for grammar manipulates information. In January 1991, the University of Arizona hosted a conference entitled, 'The NATO Advanced Research Workshop on Current and Emergent Phenomena and Biomolecular Systems.' What does that mean exactly? It means this: We refer to one paper that was delivered at the conference which stands out for its different attitude towards the development under discussion at that time. It was, in effect, a protest and chilling warning to the attending scientists about the potential abuse of their research findings.

Their findings, of course, stated that the United States has already developed communications equipment which can make the blind see, the deaf hear and the lame walk. It can relieve the terminally ill from pain without the use of drugs or surgery. I'm not talking about science fiction. A man might retain the use of all his faculties right up to the moment of his death. This communications equipment depends upon a completely new way of looking at the human brain and neuromuscular systems and radiation pulses at ultra-low frequencies. **Some of this equipment is now operational within the Central Intelligence Agency (CIA), and Federal Bureau of Investigation (FBI).** It will never be used to make the blind see, the deaf hear and the lame walk because it is central to the domestic political agenda and foreign policy of George Bush and his puppet-masters of the new world order.

Domestically, the new communications equipment is being used to torture and murder persons who match profiles imagined to be able to screen a given population for terrorists; to torture and murder citizens who belong to organizations which promote tolerance and peace and development in Central America; to torture and murder citizens who belong to organizations who oppose the development and deployment of nuclear weapons, and to create a race of slave cult automatons, or what is popularly called 'the Manchurian Candidates.' Overseas experimentation is taking place on hostages held by the United States and Canada, Great Britain, Australia, Germany, Finland and France. Additionally, there has been a long series of bizarre suicides among British computer scientists, all of whom have had some connection to the United States Navy.

What is possible to ask before such a psychology of terror is this: would any government, corporation or psychiatrist wilfully promote such horror today? The answer is quite obviously, 'Yes.' Government agencies and the corporations that work with them toward a new world order are prepared to promote anything that will help them achieve their objective of total social control. As for the question of why: For one thing, if you terrify the public and make them fear for their safety, they will allow you to implement draconian law enforcement practice, disarm them and keep extensive records on them, and they only have to tell you that it is all to protect you, of course. Secondly, it promotes the decay of the present democratic forms of political systems, and leads societies to search for alternative methods of political ideology. Of course, **the alternative has already been planned**. It is called the New World Order and it will not have your safety or interests at heart. As George Bush said: 'Read my lips.' Fear has always been used by powerful elite to control and subjugate the masses.

The old maxim, 'divide and conquer', is being played out to the limit worldwide to ensure that everyone is frightened for their personal safety, and to be suspicious of everyone else. This, too, is mind-control. To go further in regard to the new technology which is at the base of the NASA Blue Beam Project, we have to consider this statement by psychologist **James V. McConnell** which was published in a 1970s issue of *Psychology Today*. He said, 'The day has come when we can combine sensory deprivation with drug hypnosis and astute manipulation of reward and punishment to gain almost absolute control over an individual's behavior. It should then be possible to achieve a very rapid and highly effective type of positive brainwashing that would allow us to make dramatic changes in a person's behavior and personality.'

Now, when we talked before about that kind of ray and the telepathic and electronically augmented communication, the kind of rays that are fed from the memories of computers which store massive data about humans, human language and dialects, and we said that the people will be reached from within, making each person to believe that his own god is speaking directly from within his or her own soul, we refer to that kind of technology and that kind of thinking that same psychologist was espousing, that is: we should be trained from birth that we should all do what society wants us to do rather than what we want to do for ourselves; that because they have the technology to do it, **no one should now be allowed to have their own individual personality**. This statement and these ideas are important because it is the basic teaching of the **United Nations** that no one owns his or her own personality. And that same psychologist claims that no one has any say-so about the kind of personality they acquire and there is no reason to believe you have the right to refuse to acquire a new personality if your old personality is considered 'antisocial.'

What is important in this declaration is that the new world order will be set up over the current system, meaning the old way of thinking and behavior and religion will be considered the 'old' and incorrect way of thinking and that they can change it at one of the eradication camps of the United Nations to make sure that anyone with this 'antisocial' behavior will be disposed of quickly so that other modified individuals will be able to fulfill the needs and agendas of the new world order

without being distracted by the truth.
Could this be the greatest mind control project ever?

The NASA Blue Beam Project is the prime directive for the new world order's absolute control over the populations of the entire earth. I would suggest you investigate this information carefully before dismissing it as fanatic lunacy. If we go further in the different reports we have presented, we find that the mind-control operations and technology include a transmitter that broadcasts at the same frequency as the human nervous-system, which transmitter is manufactured by the **Loral Electro-Optical System** in Pasadena, California. Loral, a major defense contractor, has previously conducted research on directed energy weapons for **Lt. Gen. Leonard Perez** of the U. S. Air Force who was searching for a weapon that could implant messages into the minds of the enemy while urging his own troops on to superhuman deeds of valor! The device employs electromagnetic radiation of gigahertz frequencies [**microwaves**] pulsed at extremely low frequencies (ELF). It is used to torture people both physically and mentally from a distance.
Weapons of this type are thought to have been used against a British woman protesting the presence of American Cruise Missiles at Greenham Common Airbase during the 1970s. This weapon can be used to induce total sensory deprivation by broadcasting signals into the auditory nerve at such high power that it blocks the ability of the individual to hear themselves think!
The process employed by such ELF technology are described in various U. S. Defense Department publications, including one entitled, **' The Electromagnetic Spectrum and Low Intensity Conflict,'** by **Captain Paul E. Tyler**, Medical Commandant, U. S. Navy, which is included in a collection entitled, '**Low Intensity Conflict and Modern Technology Edict**,' by **Lt. Col David G. Dean**, USAF. The paper was delivered in 1984 and the collection published 1986 by Air University Press, Maxwell Airforce Base, Alabama. Another pulse microwave device can deliver audible signals directly to an individual while remaining undetectable to anyone else. The technology is very simple and can be built by using an ordinary police radar gun. The microwave beam generated by the device is modulated at audio frequencies and can broadcast messages directly into the brain. Now here we come to the NASA Blue Beam Project. The broadcasting of subliminal two-way communication and images from the depths of space correspond directly to that kind of technology.
In his book, '*The Body Electric*,' Nobel Prize nominee Dr. Robert O. Becker describes a series of experiments conducted in the early 1960s by **Allen Frie** where this phenomena was demonstrated as well as later experiments conducted in 1973 at the Walter Reed Army Institute of Research by Dr. Joseph C. Sharp who personally underwent tests in which he proved he could hear and understand messages delivered to him in an echo-free isolation chamber via a pulsed microwave audiogram which is an analog of the word's sound vibration beamed into his brain. Becker then goes on to state, 'Such a device has obvious application for covert operations designed to drive a target crazy with unknown voices or deliver undetectable instructions to a programmed assassin."
Now figure out when we hear that voice from the new world messiah who would be speaking from

space to all of the sane (?) people of the earth who might give instructions to zealots and religious fanatics, we would see hysteria and social mayhem on a scale never witnessed before on this planet. No police forces in the world, even as a combined front, could deal with the disorder that will follow! A 1978 book entitled, '*Microwave Auditory Effect and Application*,' by **James C. Lynn**describes how audible voices can be broadcast directly into the brain. This technology could actually allow the blind to see and the deaf to hear. Instead, it has been turned into a weapon to enslave the world.

Allen Frie also reports that he could speed up, slow down or stop the hearts of isolated frogs by synchronizing the pulsed rate of a microwave beam with the heart itself. According to Dr. Robert Becker, similar results have been obtained using live frogs, which shows that **it is technically feasible to produce heart attacks with rays designed to penetrate the human chest.**
[EDITOR'S NOTE: Both the author of this report and his colleague died of 'heart attacks' only days apart. I should mention also that Dr. Becker does NOT participate in such research.]
It has been demonstrated that focused ultra high frequency UHF electromagnetic energy beams can be used to induce considerable agitation and muscular activity or induce muscular weakness and lethargy. Microwaves can also be used to burn human skin and aid the effect of drugs, bacteria and poisons or affect the function of the entire brain. These effects were all revealed at length by the CIA on September 21, 1977 in testimony before the Subcommittee on Health and Scientific Research. **Dr. Sidney Gottlieb** who directed the MK-Ultra program at that time was forced to discuss the scope of the CIA's research to find techniques of activation of the human organism by remote electronic means. So this is something that exists right now, that has been pursued to its highest degree, that can be used from space to reach any person, anyplace on the face of the earth. If we go deeper in that process of mind control over the people we find that the equipment and technology has been used to influence politics in a much more direct fashion. Michael Dukakis, the Democrat candidate running against George Bush in the 1988 election was targeted with microwave technology in order to impede his public speaking performance once the public opinion polls showed he posed a serious threat to Bush's election prospects. He also claims that the equipment was used against Kitty Dukakis and drove her to the brink of suicide. In the Disneyland world of U. S. politics, a presidential candidate with problems such as these, would obviously lose their race to the White House. In the December 1980 edition of the U. S. Army Journal, called the Military Review, a column by **Lt. Col John B. Alexander**, entitled, '**The New Mental Battlefield: Beam Me Up, Spock**,' provides further insight into the technical capabilities at the disposal of the comptroller. He writes:
"Several examples will demonstrate areas in which progress have been made. The transference of energy from one organism to another; the ability to heal ***or cause disease to be transmitted over a distance, thus inducing illness or death from no apparent cause****; telepathic behavior modification which includes the ability to induce hypnotic states up to a distance of 1,000 kilometers have been*

reported.

The use of telepathic hypnosis also holds great potential. This capability could allow agents to be deeply planted with no conscious knowledge of their programming. In movie terms, the Manchurian Candidate lives, and does not even require a telephone call. 'Other mind-to-mind induction techniques are being considered. If perfected this capability could allow the direct transference of thought via telepathy from one mind or group of minds to a select target audience. The unique factor is that the recipient will not be aware that thought has been implanted from an external source. He or she will believe the thoughts are original."

This is exactly what we were talking about.

The third step in the NASA Blue Beam Project is called the **Telepathic Electronic Two-Way Communication**. Lt. Col John Alexander's article continues:

"If it is possible to feed artificial thought into the multigenic field via satellite, the ***mind control of the entire planet is now possible.*** *An individual's only resistance would be to constantly question the motivation behind their thoughts and not act upon thoughts which they consider to be outside their own ideological, religious and moral boundaries.'"*

Once again, it is wise to consider how television, advertising, modern education and various types of social pressure are used to manipulate those boundaries. It has been reported by Lt. Col Alexander who said, in the summary of his Military Review article,

'The information on those kinds of technologies presented here would be considered by some to be ridiculous since it does not conform to their view of reality. But some people still believe the world is flat.'

Now, this means a lot, because if people do not believe this kind of technology is possible, or that it is science fiction, those people put themselves in great jeopardy, because on the night when those thousand stars will shine from space, during the night when the new messiah will be presented to the world, they will not be prepared and will have no time to prepare to save themselves against that kind of technology. They don't believe and they won't take time to prepare.

(This is exactly what happens to people who are convinced by Satan into believing that he doesn't exist, so they have no defence against him. - JAH.)

Universal Supernatural Manifestations via Electronics

The **fourth step** concerns the universal supernatural manifestation with electronic means. It contains three different orientations.

One is to make mankind believe that **an alien (off-world) invasion** is about to occur at every major city on earth in order to provoke each major nation to use its nuclear weapons in order to strike back. This way, the United Nations Court will require that all those nations which launched nuclear weapons to disarm when the invasion is shown to have been false. And how will the United Nations know that the invasion was false? They will have staged it, of course.

The second is to make the Christians believe that the **Rapture** is going to occur with the supposed divine intervention of an alien (off-world) civilization coming to rescue earthlings from a savage and merciless demon. Its goal will be to dispose of all significant opposition to the implementation of the New World Order in one major stroke, actually *within hours* of the beginning of the sky show!

The third orientation in the fourth step is a mixture of electronic and supernatural forces. The ***waves used at that time will allow "supernatural forces" to travel through optical fibers, coaxial cables (TV) electrical and phone lines in order to penetrate to everyone at once through major appliances.*** Embedded chips will already be in place. *The goal of this deals with global Satanic ghosts projected all around the world in order to push all populations to the edge of hysteria and madness*, to drown them into a wave of suicide, murder and permanent psychological disorders.

After the **Night of the Thousand Stars**, worldwide populations will be ready for the **new messiah to re-establish order and peace at any cost**, even at the cost of abdication of freedom.

Phasing Out Cash & Independence

The techniques used in the fourth step is exactly the same used in the past in the USSR to force the people to accept Communism. The same technique will be used by the United Nations to implement the new world religion and the new world order. A lot of people ask when this is going to happen and how they will accomplish the visions of the Night of a Thousand Stars, and the events that will point to the days when it will begin.

According to the many reports we have received, we believe it will begin with some kind of worldwide economic disaster. Not a complete crash, but enough to allow them **to introduce some kind of in-between currency** before they introduce their electronic cash to replace all paper or plastic money. The in-between currency will be used to force anyone with savings to spend or turn in their cash because they understand that people who have money and are not dependent upon them might be the very ones who will mount an insurrection against them. If everyone is broke, no one can fund a war of any kind: paper currency will cease to exist. This is one of the first signs.

But to implement the worldwide electronic money system, everyone in the world who might have money in the future, will have to have a way to transfer money electronically. Before that time, everyone will have spent, before the year 2,000, all of their cash, reserves and assets. Everyone has to be 100% dependent upon the Council for their existence. To prevent any kind of independence, the new world order has already **implanted micro chips** in wild animals, birds, fish, etc. Why? They want to make certain that the people who will not accept the New World Order will not be able to hunt or fish any where in the world. If they try, they will be tracked and traced by satellites, then hunted down and imprisoned or killed.

The new world order is already changing the laws of all nations to make everyone dependent upon a single food and vitamin supply. They are changing laws about religion and psychiatric disorders in order to identify anyone who is potentially threatening to the NWO. Those who are found defective will be sent to eradication camps where their organs will be taken and sold to the highest bidders.

Those who are not killed outright will be used as slave labor or used in medical experiments. The goal of a dictatorship is to control everyone, everywhere on the planet, ruthlessly and without exception. That's why the new technology being introduced everywhere is a technology for the control of the people. The technology of the 1940s and 1950s was used to help the people have an easier and more productive life.

The new technology is designed and built to track down and control people everywhere. This technology is being manufactured for a specific purpose and to refuse to see and recognize that purpose, which is to enslave the entire populations of the world, is to deny the emergence of the Antichrist and the establishment of the new world order religion and government. **If you cannot see**, *if you cannot learn*, **if you cannot understand**, then you and your family and friends will succumb to the fires of the crematoria that have been built in every state and every major city on earth, built to deal with you. No one is safe in a totalitarian police state!

Serge Monast

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United Nations
Sustainable Development

United Nations Conference on Environment & Development
Rio de Janerio, Brazil, 3 to 14 June 1992

AGENDA 21

CONTENTS

Chapter **Paragraphs**
1. Preamble 1.1 - 1.6

SECTION I. SOCIAL AND ECONOMIC DIMENSIONS

2. International cooperation to accelerate sustainable development in developing countries and related domestic policies 2.1 - 2.43
3. Combating poverty 3.1 - 3.12
4. Changing consumption patterns 4.1 - 4.27
5. Demographic dynamics and sustainability 5.1 - 5.66
6. Protecting and promoting human health conditions 6.1 - 6.46
7. Promoting sustainable human settlement development 7.1 - 7.80
8. Integrating environment and development in decision-making 8.1 - 8.54

SECTION II. CONSERVATION AND MANAGEMENT OF RESOURCES FOR DEVELOPMENT

9. Protection of the atmosphere 9.1 - 9.35
10. Integrated approach to the planning and management of land resources 10.1 - 10.18
11. Combating deforestation 11.1 - 11.40
12. Managing fragile ecosystems: combating desertification and drought 12.1 - 12.63
13. Managing fragile ecosystems: sustainable mountain development 13.1 - 13.24
14. Promoting sustainable agriculture and rural development 14.1 - 14.104
15. Conservation of biological diversity 15.1 - 15.11
16. Environmentally sound management of biotechnology 16.1 - 16.46
17. Protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources 17.1 - 17.136
18. Protection of the quality and supply of freshwater resources: application of integrated approaches to the development, management and use of water resources 18.1 - 18.90
19. Environmentally sound management of toxic chemicals, including prevention of illegal international traffic in toxic and dangerous products 19.1 - 19.76
20. Environmentally sound management of hazardous wastes, in hazardous wastes 20.1 - 20.46
21. Environmentally sound management of solid wastes and sewage-related issues 21.1 - 21.49
22. Safe and environmentally sound management of radioactive wastes 22.1 - 22.9

SECTION III. STRENGTHENING THE ROLE OF MAJOR GROUPS

23. Preamble 23.1 - 23.4
24. Global action for women towards sustainable and equitable development 24.1 - 24.12
25. Children and youth in sustainable development 25.1 - 25.17
26. Recognizing and strengthening the role of indigenous people and their communities 26.1 - 26.9
27. Strengthening the role of non-governmental organizations: partners for sustainable development 27.1 - 27.13
28. Local authorities' initiatives in support of Agenda 21 28.1 - 28.7
29. Strengthening the role of workers and their trade unions 29.1 - 29.14
30. Strengthening the role of business and industry 30.1 - 30.30
31. Scientific and technological community 31.1 - 31.12

32. Strengthening the role of farmers 32.1 - 32.14

SECTION IV. MEANS OF IMPLEMENTATION

33. Financial resources and mechanisms 33.1 - 33.21
34. Transfer of environmentally sound technology, cooperation and capacity-building 34.1 - 34.29
35. Science for sustainable development 35.1 - 35.25
36. Promoting education, public awareness and training 36.1 - 36.27
37. National mechanisms and international cooperation for capacity-building in developing countries 37.1 - 37.13
38. International institutional arrangements 38.1 - 38.45
39. International legal instruments and mechanisms 39.1 - 39.10
40. Information for decision-making 40.1 - 40.30

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* For section I (Social and economic dimensions), see A/CONF.151/26 (Vol. I); for section III (Strengthening the role of major groups) and section IV (Means of implementation), see A.CONF/151/26 (Vol. III).

* For section II (Conservation and management of resources for development), see A/CONF.151/26 (Vol. II); for section III (Strengthening the role of major groups) and section IV (Means of implementation), see A/CONF.151/26 (Vol. III).

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Agenda 21 - Chapter 1
PREAMBLE

1.1. Humanity stands at a defining moment in history. We are confronted with a perpetuation of disparities between and within nations, a worsening of poverty, hunger, ill health and illiteracy, and the continuing deterioration of the ecosystems on which we depend for our well-being. However, integration of environment and development concerns and greater attention to them will lead to the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future. No nation can achieve this on its own; but together we can - in a global partnership for sustainable development.

1.2. This global partnership must build on the premises of General Assembly resolution 44/228 of 22 December 1989, which was adopted when the nations of the world called for the United Nations Conference on Environment and Development, and on the acceptance of the need to take a balanced and integrated approach to environment and development questions.

1.3. Agenda 21 addresses the pressing problems of today and also aims at preparing the world for the challenges of the next century. It reflects a global consensus and political commitment at the highest level on development and environment cooperation. Its successful implementation is first and foremost the responsibility of Governments. National strategies, plans, policies and processes are crucial in achieving this. International cooperation should support and supplement such national efforts. In this context, the United Nations system has a key role to play. Other international, regional and subregional organizations are also called upon to contribute to this effort. The broadest public participation and the active involvement of the non-governmental organizations and other groups should also be encouraged.

1.4. The developmental and environmental objectives of Agenda 21 will require a substantial flow of new and additional financial resources to developing countries, in order to cover the incremental costs for the actions they have to undertake to deal with global environmental problems and to accelerate sustainable development. Financial resources are also required for strengthening the capacity of international institutions for the implementation of Agenda 21. An indicative order-of-magnitude assessment of costs is included in each of the programme areas. This assessment will need to be examined and refined by the relevant implementing agencies and organizations.

1.5. In the implementation of the relevant programme areas identified in Agenda 21, special attention should be given to the particular circumstances facing the economies in transition. It must also be recognized that these countries are facing unprecedented challenges in transforming their economies, in some cases in the midst of considerable social and political tension.

1.6. The programme areas that constitute Agenda 21 are described in terms of the basis for action, objectives, activities and means of implementation. Agenda 21 is a dynamic programme. It will be carried out by the various actors according to the different situations, capacities and priorities of countries and regions in full respect of all the principles contained in the Rio Declaration on Environment and Development. It could evolve over time in the light of changing needs and circumstances. This process marks the beginning of a new global partnership for sustainable development.

* * * * *

* When the term "Governments" is used, it will be deemed to include the European Economic Community within its areas of competence. Throughout Agenda 21 the term "environmentally sound" means "environmentally safe and sound", in particular when applied to the terms "energy sources", "energy supplies", "energy systems" and "technology" or "technologies".

Agenda 21 - Chapter 2
INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC POLICIES

2.1. In order to meet the challenges of environment and development, States have decided to establish a new global partnership. This partnership commits all States to engage in a continuous and constructive dialogue, inspired by the need to achieve a more efficient and equitable world economy, keeping in view the increasing interdependence of the community of nations and that sustainable development should become a priority item on the agenda of the international community. It is recognized that, for the success of this new partnership, it is important to overcome confrontation and to foster a climate of genuine cooperation and solidarity. It is equally important to strengthen national and international policies and multinational cooperation to adapt to the new realities.

2.2. Economic policies of individual countries and international economic relations both have great relevance to sustainable development. The reactivation and acceleration of development requires both a dynamic and a supportive international economic environment and determined policies at the national level. It will be frustrated in the absence of either of these requirements. A supportive external economic environment is crucial. The development process will not gather momentum if the global economy lacks dynamism and stability and is beset with uncertainties. Neither will it gather momentum if the developing countries are weighted down by external indebtedness, if development finance is inadequate, if barriers restrict access to markets and if commodity prices and the terms of trade of developing countries remain depressed. The record of the 1980s was essentially negative on each of these counts and needs to be reversed. The policies and measures needed to create an international environment that is strongly supportive of national development efforts are thus vital. International cooperation in this area should be designed to complement and support - not to diminish or subsume - sound domestic economic policies, in both developed and developing countries, if global progress towards sustainable development is to be achieved.

2.3. The international economy should provide a supportive international climate for achieving environment and development goals by:

PROGRAMME AREAS

A. Promoting sustainable development through trade Basis for action

2.5. An open, equitable, secure, non-discriminatory and predictable multilateral trading system that is consistent with the goals of sustainable development and leads to the optimal distribution of global production in accordance with comparative advantage is of benefit to all trading partners. Moreover, improved market access for developing countries' exports in conjunction with sound macroeconomic and environmental policies would have a positive environmental impact and therefore make an important contribution towards sustainable development.

2.6. Experience has shown that sustainable development requires a commitment to sound economic policies and management, an effective and predictable public administration, the integration of environmental concerns into decision-making and progress towards democratic government, in the light of country-specific conditions, which allows for full participation of all parties concerned. These attributes are essential for the fulfilment of the policy directions and objectives listed below.

2.7. The commodity sector dominates the economies of many developing countries in terms of production, employment and export earnings. An important feature of the world commodity economy in the 1980s was the prevalence of very low and declining real prices for most commodities in international markets and a resulting substantial contraction in commodity export earnings for many producing countries. The ability of those countries to mobilize, through international trade, the resources needed to finance investments required for sustainable development may be impaired by this development and by tariff and non-tariff impediments, including tariff escalation, limiting their access to export markets. The removal of existing distortions in international trade is essential. In particular, the achievement of this objective requires that there be substantial and progressive reduction in the support and protection of agriculture - covering internal regimes, market access and export subsidies - as well as of industry and other sectors, in order to avoid inflicting large losses on the more efficient producers, especially in developing countries. Thus, in agriculture, industry and other sectors, there is scope for initiatives aimed at trade liberalization and at policies to make production more responsive to environment and development needs. Trade liberalization should therefore be pursued on a global basis across economic sectors so as to contribute to sustainable development.

2.8. The international trading environment has been affected by a number of developments that have created new challenges and opportunities and have made multilateral economic cooperation of even greater importance. World trade has continued to grow faster than world output in recent years. However, the expansion of world trade has been unevenly spread, and only a limited number of developing countries have been capable of achieving appreciable growth in their exports. Protectionist pressures and unilateral policy actions continue to endanger the functioning of an open multilateral trading system, affecting particularly the export interests of developing countries. Economic integration processes have intensified in recent years and should impart dynamism to global trade and enhance the trade and development possibilities for developing countries. In recent years, a growing number of these countries have adopted courageous policy reforms involving ambitious autonomous trade liberalization, while far-reaching reforms and profound restructuring processes are taking place in Central and Eastern European countries, paving the way for their integration into the world economy and the international trading system. Increased attention is being devoted to enhancing the role of enterprises and promoting competitive markets through adoption of competitive policies. The GSP has proved to be a useful trade policy instrument, although its objectives will have to be fulfilled, and trade facilitation strategies relating to electronic data interchange (EDI) have been effective in improving the trading efficiency of the public and private sectors. The interactions between environment policies and trade issues are manifold and have not yet been fully assessed. An early, balanced, comprehensive and successful outcome of the Uruguay Round of multilateral trade negotiations would bring about further liberalization and expansion of world trade, enhance the trade and development possibilities of developing countries and provide greater security and predictability to the international trading system.

Objectives

2.9. In the years ahead, and taking into account the results of the Uruguay Round of multilateral trade negotiations, Governments should continue to strive to meet the following objectives:

a. To promote an open, non-discriminatory and equitable multilateral trading system that will enable all countries - in particular, the developing countries - to improve their economic structures and improve the standard of living of their populations through sustained economic development;

b. To improve access to markets for exports of developing countries;

c. To improve the functioning of commodity markets and achieve sound, compatible and consistent commodity policies at national and international levels with a view to optimizing the contribution of the commodity sector to sustainable development, taking into account environmental considerations;

d. To promote and support policies, domestic and international, that make economic growth and environmental protection mutually supportive.

Activities

(a) International and regional cooperation and coordination Promoting an international trading system that takes account of the needs of developing countries

2.10. Accordingly, the international community should:

a. Halt and reverse protectionism in order to bring about further liberalization and expansion of world trade, to the benefit of all countries, in particular the developing countries;

b. Provide for an equitable, secure, non-discriminatory and predictable international trading system;

c. Facilitate, in a timely way, the integration of all countries into the world economy and the international trading system;

d. Ensure that environment and trade policies are mutually supportive, with a view to achieving sustainable development;

e. Strengthen the international trade policies system through an early, balanced, comprehensive and successful outcome of the Uruguay Round of multilateral trade negotiations.

2.11. The international community should aim at finding ways and means of achieving a better functioning and enhanced transparency of commodity markets, greater diversification of the commodity sector in developing economies within a macroeconomic framework that takes into consideration a country's economic structure, resource endowments and market opportunities, and better management of natural resources that takes into account the necessities of sustainable development.

2.12. Therefore, all countries should implement previous commitments to halt and reverse protectionism and further expand market access, particularly in areas of interest to developing countries. This improvement of market access will be facilitated by appropriate structural adjustment in developed countries. Developing countries should continue the trade-policy reforms and structural adjustment they have undertaken. It is thus urgent to achieve an improvement in market access conditions for commodities, notably through the progressive removal of barriers that restrict imports, particularly from developing countries, of commodity products in primary and processed forms, as well as the substantial and progressive reduction of types of support that induce uncompetitive production, such as production and export subsidies. (b) Management related activities Developing domestic policies that maximize the benefits of trade liberalization for sustainable development

2.13. For developing countries to benefit from the liberalization of trading systems, they should implement the following policies, as appropriate:

a. Create a domestic environment supportive of an optimal balance between production for the domestic and export markets and remove biases against exports and discourage inefficient import-substitution;

b. Promote the policy framework and the infrastructure required to improve the efficiency of export and import trade as well as the functioning of domestic markets.

2.14. The following policies should be adopted by developing countries with respect to commodities consistent with market efficiency:

a. Expand processing, distribution and improve marketing practices and the competitiveness of the commodity sector;

b. Diversify in order to reduce dependence on commodity exports;

c. Reflect efficient and sustainable use of factors of production in the formation of commodity prices, including the reflection of environmental, social and resources costs.

(c) Data and information
Encouraging data collection and research

2.15. GATT, UNCTAD and other relevant institutions should continue to collect appropriate trade data and information. The Secretary-General of the United Nations is requested to strengthen the Trade Control Measures Information System managed by UNCTAD.
Improving international cooperation in commodity trade and the diversification of the sector

2.16. With regard to commodity trade, Governments should, directly or through appropriate international organizations, where appropriate:

a. Seek optimal functioning of commodity markets, inter alia, through improved market transparency involving exchanges of views and information on investment plans, prospects and markets for individual commodities. Substantive negotiations between producers and consumers should be pursued with a view to achieving viable and more efficient international agreements that take into account market trends, or arrangements, as well as study groups. In this regard, particular attention should be paid to the agreements on cocoa, coffee, sugar and tropical timber. The importance of international commodity agreements and arrangements is underlined. Occupational health and safety matters, technology transfer and services associated with the production, marketing and promotion of commodities, as well as environmental considerations, should be taken into account;

b. Continue to apply compensation mechanisms for shortfalls in commodity export earnings of developing countries in order to encourage diversification efforts;

c. Provide assistance to developing countries upon request in the design and implementation of commodity policies and the gathering and utilization of information on commodity markets;

d. Support the efforts of developing countries to promote the policy framework and infrastructure required to improve the efficiency of export and import trade;

e. Support the diversification initiatives of the developing countries at the national, regional and international levels.

Means of implementation

a. Financing and cost evaluation

2.17. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities in this programme area to be about $8.8 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

b. Capacity-building 2.18. The above-mentioned technical cooperation activities aim at strengthening national capabilities for design and implementation of commodity policy, use and management of national resources and the gathering and utilization of information on commodity markets.

B. Making trade and environment mutually supportive Basis for action

2.19. Environment and trade policies should be mutually supportive. An open, multilateral trading system makes possible a more efficient allocation and use of resources and thereby contributes to an increase in production and incomes and to lessening demands on the environment. It thus provides additional resources needed for economic growth and development and improved environmental protection. A sound environment, on the other hand, provides the ecological and other resources needed to sustain growth and underpin a continuing expansion of trade. An open, multilateral trading system, supported by the adoption of sound environmental policies, would have a positive impact on the environment and contribute to sustainable development.

2.20. International cooperation in the environmental field is growing, and in a number of cases trade provisions in multilateral environment agreements have played a role in tackling global environmental challenges. Trade measures have thus been used in certain specific instances, where considered necessary, to enhance the effectiveness of environmental regulations for the protection of the environment. Such regulations should address the root causes of environmental degradation so as not to result in unjustified restrictions on trade. The challenge is to ensure that trade and environment policies are consistent and reinforce the process of sustainable development. However, account should be taken of the fact that environmental standards valid for developed countries may have unwarranted social and economic costs in developing countries.

Objectives

2.21. Governments should strive to meet the following objectives, through relevant multilateral forums, including GATT, UNCTAD and other international organizations:

a. To make international trade and environment policies mutually supportive in favour of sustainable development;

b. To clarify the role of GATT, UNCTAD and other international organizations in dealing with trade and environment-related issues, including, where relevant, conciliation procedure and dispute settlement;

c. To encourage international productivity and competitiveness and encourage a constructive role on the part of industry in dealing with environment and development issues.

Activities

Developing an environment/trade and development agenda

2.22. Governments should encourage GATT, UNCTAD and other relevant international and regional economic institutions to examine, in accordance with their respective mandates and competences, the following propositions and principles:

a. Elaborate adequate studies for the better understanding of the relationship between trade and environment for the promotion of sustainable development;
b. Promote a dialogue between trade, development and environment communities;
c. In those cases when trade measures related to environment are used, ensure transparency and compatibility with international obligations;
d. Deal with the root causes of environment and development problems in a manner that avoids the adoption of environmental measures resulting in unjustified restrictions on trade;
e. Seek to avoid the use of trade restrictions or distortions as a means to offset differences in cost arising from differences in environmental standards and regulations, since their application could lead to trade distortions and increase protectionist tendencies;
f. Ensure that environment-related regulations or standards, including those related to health and safety standards, do not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on trade;

g. Ensure that special factors affecting environment and trade policies in the developing countries are borne in mind in the application of environmental standards, as well as in the use of any trade measures. It is worth noting that standards that are valid in the most advanced countries may be inappropriate and of unwarranted social cost for the developing countries;

h. Encourage participation of developing countries in multilateral agreements through such mechanisms as special transitional rules;

i. Avoid unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country. Environmental measures addressing transborder or global environmental problems should, as far as possible, be based on an international consensus. Domestic measures targeted to achieve certain environmental objectives may need trade measures to render them effective. Should trade policy measures be found necessary for the enforcement of environmental policies, certain principles and rules should apply. These could include, inter alia, the principle of non-discrimination; the principle that the trade measure chosen should be the least trade-restrictive necessary to achieve the objectives; an obligation to ensure transparency in the use of trade measures related to the environment and to provide adequate notification of national regulations; and the need to give consideration to the special conditions and developmental requirements of developing countries as they move towards internationally agreed environmental objectives;

j. Develop more precision, where necessary, and clarify the relationship between GATT provisions and some of the multilateral measures adopted in the environment area;

k. Ensure public input in the formation, negotiation and implementation of trade policies as a means of fostering increased transparency in the light of country-specific conditions;

l. Ensure that environmental policies provide the appropriate legal and institutional framework to respond to new needs for the protection of the environment that may result from changes in production and trade specialization.

C. Providing adequate financial resources to developing countries

Basis for action

2.23. Investment is critical to the ability of developing countries to achieve needed economic growth to improve the welfare of their populations and to meet their basic needs in a sustainable manner, all without deteriorating or depleting the resource base that underpins development. Sustainable development requires increased investment, for which domestic and external financial resources are needed. Foreign private investment and the return of flight capital, which depend on a healthy investment climate, are an important source of financial resources. Many developing countries have experienced a decade-long situation of negative net transfer of financial resources, during which their financial receipts were exceeded by payments they had to make, in particular for debt-servicing. As a result, domestically mobilized resources had to be transferred abroad instead of being invested locally in order to promote sustainable economic development.

2.24. For many developing countries, the reactivation of development will not take place without an early and durable solution to the problems of external indebtedness, taking into account the fact that, for many developing countries, external debt burdens are a significant problem. The burden of debt-service payments on those countries has imposed severe constraints on their ability to accelerate growth and eradicate poverty and has led to a contraction in imports, investment and consumption. External indebtedness has emerged as a main factor in the economic stalemate in the developing countries. Continued vigorous implementation of the evolving international debt strategy is aimed at restoring debtor countries' external financial viability, and the resumption of their growth and development would assist in achieving sustainable growth and development. In this context, additional financial resources in favour of developing countries and the efficient utilization of such resources are essential.

Objectives

2.25. The specific requirements for the implementation of the sectoral and cross-sectoral programmes included in Agenda 21 are dealt with in the relevant programme areas and in chapter 33 (Financial resources and mechanisms).

Activities

(a) Meeting international targets of official development assistance funding

2.26. As discussed in chapter 33, new and additional resources should be provided to support Agenda 21 programmes.

(b) Addressing the debt issue

2.27. In regard to the external debt incurred with commercial banks, the progress being made under the strengthened debt strategy is recognized and a more rapid implementation of this strategy is encouraged. Some countries have already benefited from the combination of sound adjustment policies and commercial bank debt reduction or equivalent measures. The international community encourages:

a. Other countries with heavy debts to banks to negotiate similar commercial bank debt reduction with their creditors;

b. The parties to such a negotiation to take due account of both the medium-term debt reduction and new money requirements of the debtor country;

c. Multilateral institutions actively engaged in the strengthened international debt strategy to continue to support debt-reduction packages related to commercial bank debt with a view to ensuring that the magnitude of such financing is consonant with the evolving debt strategy;

d. Creditor banks to participate in debt and debt-service reduction;

e. Strengthened policies to attract direct investment, avoid unsustainable levels of debt and foster the return of flight capital.

2.28. With regard to debt owed to official bilateral creditors, the recent measures taken by the Paris Club with regard to more generous terms of relief to the poorest most indebted countries are welcomed. Ongoing efforts to implement these "Trinidad terms" measures in a manner commensurate with the payments capacity of those countries and in a way that gives additional support to their economic reform efforts are welcomed. The substantial bilateral debt reduction undertaken by some creditor countries is also welcomed, and others which are in a position to do so are encouraged to take similar action.

2.29. The actions of low-income countries with substantial debt burdens which continue, at great cost, to service their debt and safeguard their creditworthiness are commended. Particular attention should be paid to their resource needs. Other debt-distressed developing countries which are making great efforts to continue to service their debt and meet their external financial obligations also deserve due attention.

2.30. In connection with multilateral debt, it is urged that serious attention be given to continuing to work towards growth-oriented solutions to the problem of developing countries with serious debt-servicing problems, including those whose debt is mainly to official creditors or to multilateral financial institutions. Particularly in the case of low-income countries in the process of economic reform, the support of the multilateral financial institutions in the form of new disbursements and the use of their concessional funds is welcomed. The use of support groups should be continued in providing resources to clear arrears of countries embarking upon vigorous economic reform programmes supported by IMF and the World Bank. Measures by the multilateral financial institutions such as the refinancing of interest on non-concessional loans with IDA reflows - "fifth dimension" - are noted with appreciation.

Means of implementation

Financing and cost evaluation*

D. Encouraging economic policies conducive to sustainable development

Basis for action

2.31. The unfavourable external environment facing developing countries makes domestic resource mobilization and efficient allocation and utilization of domestically mobilized resources all the more important for the promotion of sustainable development. In a number of countries, policies are necessary to correct misdirected public spending, large budget deficits and other macroeconomic imbalances, restrictive policies and distortions in the areas of exchange rates, investment and finance, and obstacles to entrepreneurship. In developed countries, continuing policy reform and adjustment, including appropriate savings rates, would help generate resources to support the transition to sustainable development both domestically and in developing countries.

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* See chap. 33 (Financial resources and mechanisms).

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2.32. Good management that fosters the association of effective, efficient, honest, equitable and accountable public administration with individual rights and opportunities is an essential element for sustainable, broadly based development and sound economic performance at all development levels. All countries should increase their efforts to eradicate mismanagement of public and private affairs, including corruption, taking into account the factors responsible for, and agents involved in, this phenomenon.

2.33. Many indebted developing countries are undergoing structural adjustment programmes relating to debt rescheduling or new loans. While such programmes are necessary for improving the balance in fiscal budgets and balance-of-payments accounts, in some cases they have resulted in adverse social and environmental effects, such as cuts in allocations for health care, education and environmental protection. It is important to ensure that structural adjustment programmes do not have negative impacts on the environment and social development so that such programmes can be more in line with the objectives of sustainable development.

Objectives

2.34. It is necessary to establish, in the light of the country-specific conditions, economic policy reforms that promote the efficient planning and utilization of resources for sustainable development through sound economic and social policies, foster entrepreneurship and the incorporation of social and environmental costs in resource pricing, and remove sources of distortion in the area of trade and investment.

Activities

(a) Management-related activities

Promoting sound economic policies

2.35. The industrialized countries and other countries in a position to do so should strengthen their efforts:

a. To encourage a stable and predictable international economic environment, particularly with regard to monetary stability, real rates of interest and fluctuations in key exchange rates;

b. To stimulate savings and reduce fiscal deficits;

c. To ensure that the processes of policy coordination take into account the interests and concerns of the developing countries, including the need to promote positive action to support the efforts of the least developed countries to halt their marginalization in the world economy;

d. To undertake appropriate national macroeconomic and structural policies aimed at promoting non-inflationary growth, narrowing their major external imbalances and increasing the adjustment capacity of their economies.

2.36. Developing countries should consider strengthening their efforts to implement sound economic policies:

a. That maintain the monetary and fiscal discipline required to promote price stability and external balance;

b. That result in realistic exchange rates;

c. That raise domestic savings and investment, as well as improve returns to investment.

2.37. More specifically, all countries should develop policies that improve efficiency in the allocation of resources and take full advantage of the opportunities offered by the changing global economic environment. In particular, wherever appropriate, and taking into account national strategies and objectives, countries should:

a. Remove the barriers to progress caused by bureaucratic inefficiencies, administrative strains, unnecessary controls and the neglect of market conditions;

b. Promote transparency in administration and decision-making;

c. Encourage the private sector and foster entrepreneurship by improving institutional facilities for enterprise creation and market entry. The essential objective would be to simplify or remove the restrictions, regulations and formalities that make it more complicated, costly and time-consuming to set up and operate enterprises in many developing countries;

d. Promote and support the investment and infrastructure required for sustainable economic growth and diversification on an environmentally sound and sustainable basis;

e. Provide scope for appropriate economic instruments, including market mechanisms, in harmony with the objectives of sustainable development and fulfilment of basic needs;

f. Promote the operation of effective tax systems and financial sectors;

g. Provide opportunities for small-scale enterprises, both farm and non-farm, and for the indigenous population and local communities to contribute fully to the attainment of sustainable development;

h. Remove biases against exports and in favour of inefficient import substitution and establish policies that allow them to benefit fully from the flows of foreign investment, within the framework of national, social, economic and developmental goals;

i. Promote the creation of a domestic economic environment supportive of an optimal balance between production for the domestic and export markets.

(b) International and regional cooperation and coordination

2.38. Governments of developed countries and those of other countries in a position to do so should, directly or through appropriate international and regional organizations and international lending institutions, enhance their efforts to provide developing countries with increased technical assistance for the following:

a. Capacity-building in the nation's design and implementation of economic policies, upon request;

b. Design and operation of efficient tax systems, accounting systems and financial sectors;

(c) Promotion of entrepreneurship.

2.39. International financial and development institutions should further review their policies and programmes in the light of the objective of sustainable development.

2.40. Stronger economic cooperation among developing countries has long been accepted as an important component of efforts to promote economic growth and technological capabilities and to accelerate development in the developing world. Therefore, the efforts of the developing countries to promote economic cooperation among themselves should be enhanced and continue to be supported by the international community.

Means of implementation

(a) Financing and cost evaluation

2.41. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities in this programme area to be about $50 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Capacity-building

2.42. The above-mentioned policy changes in developing countries involve substantial national efforts for capacity-building in the areas of public administration, central banking, tax administration, savings institutions and financial markets.

2.43. Particular efforts in the implementation of the four programme areas identified in this chapter are warranted in view of the especially acute environmental and developmental problems of the least developed countries.

Agenda 21 - Chapter 3
COMBATING POVERTY

PROGRAMME AREA
Enabling the poor to achieve sustainable livelihoods

Basis for action

3.1. Poverty is a complex multidimensional problem with origins in both the national and international domains. No uniform solution can be found for global application. Rather, country-specific programmes to tackle poverty and international efforts supporting national efforts, as well as the parallel process of creating a supportive international environment, are crucial for a solution to this problem. The eradication of poverty and hunger, greater equity in income distribution and human resource development remain major challenges everywhere. The struggle against poverty is the shared responsibility of all countries.

3.2. While managing resources sustainably, an environmental policy that focuses mainly on the conservation and protection of resources must take due account of those who depend on the resources for their livelihoods. Otherwise it could have an adverse impact both on poverty and on chances for long-term success in resource and environmental conservation. Equally, a development policy that focuses mainly on increasing the production of goods without addressing the sustainability of the resources on which production is based will sooner or later run into declining productivity, which could also have an adverse impact on poverty. A specific anti-poverty strategy is therefore one of the basic conditions for ensuring sustainable development. An effective strategy for tackling the problems of poverty, development and environment simultaneously should begin by focusing on resources, production and people and should cover demographic issues, enhanced health care and education, the rights of women, the role of youth and of indigenous people and local communities and a democratic participation process in association with improved governance.

3.3. Integral to such action is, together with international support, the promotion of economic growth in developing countries that is both sustained and sustainable and direct action in eradicating poverty by strengthening employment and income-generating programmes.

Objectives

3.4. The long-term objective of enabling all people to achieve sustainable livelihoods should provide an integrating factor that allows policies to address issues of development, sustainable resource management and poverty eradication simultaneously. The objectives of this programme area are:

a. To provide all persons urgently with the opportunity to earn a sustainable livelihood;

b. To implement policies and strategies that promote adequate levels of funding and focus on integrated human development policies, including income generation, increased local control of resources, local institution-strengthening and capacity-building and greater involvement of non-governmental organizations and local levels of government as delivery mechanisms;

c. To develop for all poverty-stricken areas integrated strategies and programmes of sound and sustainable management of the environment, resource mobilization, poverty eradication and alleviation, employment and income generation;

d. To create a focus in national development plans and budgets on investment in human capital, with special policies and programmes directed at rural areas, the urban poor, women and children. Activities

3.5. Activities that will contribute to the integrated promotion of sustainable livelihoods and environmental protection cover a variety of sectoral interventions involving a range of actors, from local to global, and are essential at every level, especially the community and local levels. Enabling actions will be necessary at the national and international levels, taking full account of regional and subregional conditions to support a locally driven and country-specific approach. In general design, the programmes should:

a. Focus on the empowerment of local and community groups through the principle of delegating authority, accountability and resources to the most appropriate level to ensure that the programme will be geographically and ecologically specific;

b. Contain immediate measures to enable those groups to alleviate poverty and to develop sustainability;

c. Contain a long-term strategy aimed at establishing the best possible conditions for sustainable local, regional and national development that would eliminate poverty and reduce the inequalities between various population groups. It should assist the most disadvantaged groups - in particular, women, children and youth within those groups - and refugees. The groups will include poor smallholders, pastoralists, artisans, fishing communities, landless people, indigenous communities, migrants and the urban informal sector.

3.6. The focus here is on specific cross-cutting measures - in particular, in the areas of basic education, primary/maternal health care, and the advancement of women.

(a) Empowering communities

3.7. Sustainable development must be achieved at every level of society. Peoples' organizations, women's groups and non-governmental organizations are important sources of innovation and action at the local level and have a strong interest and proven ability to promote sustainable livelihoods. Governments, in cooperation with appropriate international and non-governmental organizations, should support a community-driven approach to sustainability, which would include, inter alia:

a. Empowering women through full participation in decision-making;

b. Respecting the cultural integrity and the rights of indigenous people and their communities;

c. Promoting or establishing grass-roots mechanisms to allow for the sharing of experience and knowledge between communities;

d. Giving communities a large measure of participation in the sustainable management and protection of the local natural resources in order to enhance their productive capacity;

e. Establishing a network of community-based learning centres for capacity-building and sustainable development.

(b) Management-related activities

3.8. Governments, with the assistance of and in cooperation with appropriate international, non-governmental and local community organizations, should establish measures that will directly or indirectly:

a. Generate remunerative employment and productive occupational opportunities compatible with country-specific factor endowments, on a scale sufficient to take care of prospective increases in the labour force and to cover backlogs;

b. With international support, where necessary, develop adequate infrastructure, marketing systems, technology systems, credit systems and the like and the human resources needed to support the above actions and to achieve a widening of options for resource-poor people. High priority should be given to basic education and professional training;

c. Provide substantial increases in economically efficient resource productivity and measures to ensure that the local population benefits in adequate measure from resource use;

d. Empower community organizations and people to enable them to achieve sustainable livelihoods;

e. Set up an effective primary health care and maternal health care system accessible to all;

f. Consider strengthening/developing legal frameworks for land management, access to land resources and land ownership - in particular, for women - and for the protection of tenants;

g. Rehabilitate degraded resources, to the extent practicable, and introduce policy measures to promote sustainable use of resources for basic human needs;

h. Establish new community-based mechanisms and strengthen existing mechanisms to enable communities to gain sustained access to resources needed by the poor to overcome their poverty;

i. Implement mechanisms for popular participation - particularly by poor people, especially women - in local community groups, to promote sustainable development;

j. Implement, as a matter of urgency, in accordance with country-specific conditions and legal systems, measures to ensure that women and men have the same right to decide freely and responsibly on the number and spacing of their children and have access to the information, education and means, as appropriate, to enable them to exercise this right in keeping with their freedom, dignity and personally held values, taking into account ethical and cultural considerations. Governments should take active steps to implement programmes to establish and strengthen preventive and curative health facilities, which include women-centred, women-managed, safe and effective reproductive health care and affordable, accessible services, as appropriate, for the responsible planning of family size, in keeping with freedom, dignity and personally held values, taking into account ethical and cultural considerations. Programmes should focus on providing comprehensive health care, including pre-natal care, education and information on health and responsible parenthood and should provide the opportunity for all women to breast-feed fully, at least during the first four months post-partum. Programmes should fully support women's productive and reproductive roles and well-being, with special attention to the need for providing equal and improved health care for all children and the need to reduce the risk of maternal and child mortality and sickness;

k. Adopt integrated policies aiming at sustainability in the management of urban centres;

l. Undertake activities aimed at the promotion of food security and, where appropriate, food self-sufficiency within the context of sustainable agriculture;

m. Support research on and integration of traditional methods of production that have been shown to be environmentally sustainable;

n. Actively seek to recognize and integrate informal-sector activities into the economy by removing regulations and hindrances that discriminate against activities in those sectors;

o. Consider making available lines of credit and other facilities for the informal sector and improved access to land for the landless poor so that they can acquire the means of production and reliable access to natural resources. In many instances special considerations for women are required. Strict feasibility appraisals are needed for borrowers to avoid debt crises;

p. Provide the poor with access to fresh water and sanitation;

q. Provide the poor with access to primary education.

(c) Data, information and evaluation

3.9. Governments should improve the collection of information on target groups and target areas in order to facilitate the design of focused programmes and activities, consistent with the target-group needs and aspirations. Evaluation of such programmes should be gender-specific, since women are a particularly disadvantaged group.

(d) International and regional cooperation and coordination

3.10. The United Nations system, through its relevant organs, organizations and bodies, in cooperation with Member States and with appropriate international and non-governmental organizations, should make poverty alleviation a major priority and should:

a. Assist Governments, when requested, in the formulation and implementation of national action programmes on poverty alleviation and sustainable development. Action-oriented activities of relevance to the above objectives, such as poverty eradication, projects and programmes supplemented where relevant by food aid, and support and special emphasis on employment and income generation, should be given particular attention in this regard;

b. Promote technical cooperation among developing countries for poverty eradication activities;

c. Strengthen existing structures in the United Nations system for coordination of action relating to poverty eradication, including the establishment of a focal point for information exchange and the formulation and implementation of replicable pilot projects to combat poverty;

d. In the follow-up of the implementation of Agenda 21, give high priority to the review of the progress made in eradicating poverty;

e. Examine the international economic framework, including resource flows and structural adjustment programmes, to ensure that social and environmental concerns are addressed, and in this connection, conduct a review of the policies of international organizations, bodies and agencies, including financial institutions, to ensure the continued provision of basic services to the poor and needy;

f. Promote international cooperation to address the root causes of poverty. The development process will not gather momentum if developing countries are weighted down by external indebtedness, if development finance is inadequate, if barriers restrict access to markets and if commodity prices and the terms of trade in developing countries remain depressed.

Means of implementation

(a) Financing and cost evaluation

3.11. The secretariat of the Conference has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $30 billion, including about $15 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. This estimate overlaps estimates in other parts of Agenda 21. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Capacity-building

3.12. National capacity-building for implementation of the above activities is crucial and should be given high priority. It is particularly important to focus capacity-building at the local community level in order to support a community-driven approach to sustainability and to establish and strengthen mechanisms to allow sharing of experience and knowledge between community groups at national and international levels. Requirements for such activities are considerable and are related to the various relevant sectors of Agenda 21 calling for requisite international, financial and technological support.

Agenda 21 - Chapter 4
CHANGING CONSUMPTION PATTERNS

4.1. This chapter contains the following programme areas:

a. Focusing on unsustainable patterns of production and consumption;

b. Developing national policies and strategies to encourage changes in unsustainable consumption patterns.

4.2. Since the issue of changing consumption patterns is very broad, it is addressed in several parts of Agenda 21, notably those dealing with energy, transportation and wastes, and in the chapters on economic instruments and the transfer of technology. The present chapter should also be read in conjunction with chapter 5 (Demographic dynamics and sustainability).

PROGRAMME AREAS

A. Focusing on unsustainable patterns of production and consumption

Basis for action

4.3. Poverty and environmental degradation are closely interrelated. While poverty results in certain kinds of environmental stress, the major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production, particularly in industrialized countries, which is a matter of grave concern, aggravating poverty and imbalances.

4.4. Measures to be undertaken at the international level for the protection and enhancement of the environment must take fully into account the current imbalances in the global patterns of consumption and production.

4.5. Special attention should be paid to the demand for natural resources generated by unsustainable consumption and to the efficient use of those resources consistent with the goal of minimizing depletion and reducing pollution. Although consumption patterns are very high in certain parts of the world, the basic consumer needs of a large section of humanity are not being met. This results in excessive demands and unsustainable lifestyles among the richer segments, which place immense stress on the environment. The poorer segments, meanwhile, are unable to meet food, health care, shelter and educational needs. Changing consumption patterns will require a multipronged strategy focusing on demand, meeting the basic needs of the poor, and reducing wastage and the use of finite resources in the production process.

4.6. Growing recognition of the importance of addressing consumption has also not yet been matched by an understanding of its implications. Some economists are questioning traditional concepts of economic growth and underlining the importance of pursuing economic objectives that take account of the full value of natural resource capital. More needs to be known about the role of consumption in relation to economic growth and population dynamics in order to formulate coherent international and national policies.

Objectives

4.7. Action is needed to meet the following broad objectives:

- a. To promote patterns of consumption and production that reduce environmental stress and will meet the basic needs of humanity;
- b. To develop a better understanding of the role of consumption and how to bring about more sustainable consumption patterns.

Activities

(a) Management-related activities

Adopting an international approach to achieving sustainable consumption patterns

4.8. In principle, countries should be guided by the following basic objectives in their efforts to address consumption and lifestyles in the context of environment and development:

- a. All countries should strive to promote sustainable consumption patterns;
- b. Developed countries should take the lead in achieving sustainable consumption patterns;
- c. Developing countries should seek to achieve sustainable consumption patterns in their development process, guaranteeing the provision of basic needs for the poor, while avoiding those unsustainable patterns, particularly in industrialized countries, generally recognized as unduly hazardous to the environment, inefficient and wasteful, in their development processes. This requires enhanced technological and other assistance from industrialized countries.

4.9. In the follow-up of the implementation of Agenda 21 the review of progress made in achieving sustainable consumption patterns should be given high priority.

(b) Data and information

Undertaking research on consumption

4.10. In order to support this broad strategy, Governments, and/or private research and policy institutes, with the assistance of regional and international economic and environmental organizations, should make a concerted effort to:

- a. Expand or promote databases on production and consumption and develop methodologies for analysing them;
- b. Assess the relationship between production and consumption, environment, technological adaptation and innovation, economic growth and development, and demographic factors;
- c. Examine the impact of ongoing changes in the structure of modern industrial economies away from material-intensive economic growth;
- d. Consider how economies can grow and prosper while reducing the use of energy and materials and the production of harmful materials;
- e. Identify balanced patterns of consumption worldwide which the Earth can support in the long term.

Developing new concepts of sustainable economic growth and prosperity

4.11. Consideration should also be given to the present concepts of economic growth and the need for new concepts of wealth and prosperity which allow higher standards of living through changed lifestyles and are less dependent on the Earth's finite resources and more in harmony with the Earth's carrying capacity. This should be reflected in the evolution of new systems of national accounts and other indicators of sustainable development.

(c) International cooperation and coordination

4.12. While international review processes exist for examining economic, development and demographic factors, more attention needs to be paid to issues related to consumption and production patterns and sustainable lifestyles and environment.

4.13. In the follow-up of the implementation of Agenda 21, reviewing the role and impact of unsustainable production and consumption patterns and lifestyles and their relation to sustainable development should be given high priority.

Financing and cost evaluation

4.14. The Conference secretariat has estimated that implementation of this programme is not likely to require significant new financial resources.

B. Developing national policies and strategies to encourage changes in unsustainable consumption patterns

Basis for action

4.15. Achieving the goals of environmental quality and sustainable development will require efficiency in production and changes in consumption patterns in order to emphasize optimization of resource use and minimization of waste. In many instances, this will require reorientation of existing production and consumption patterns that have developed in industrial societies and are in turn emulated in much of the world.

4.16. Progress can be made by strengthening positive trends and directions that are emerging, as part of a process aimed at achieving significant changes in the consumption patterns of industries, Governments, households and individuals.

Objectives

4.17. In the years ahead, Governments, working with appropriate organizations, should strive to meet the following broad objectives:

a. To promote efficiency in production processes and reduce wasteful consumption in the process of economic growth, taking into account the development needs of developing countries;

b. To develop a domestic policy framework that will encourage a shift to more sustainable patterns of production and consumption;

c. To reinforce both values that encourage sustainable production and consumption patterns and policies that encourage the transfer of environmentally sound technologies to developing countries.

Activities

(a) Encouraging greater efficiency in the use of energy and resources

4.18. Reducing the amount of energy and materials used per unit in the production of goods and services can contribute both to the alleviation of environmental stress and to greater economic and industrial productivity and competitiveness. Governments, in cooperation with industry, should therefore intensify efforts to use energy and resources in an economically efficient and environmentally sound manner by:

a. Encouraging the dissemination of existing environmentally sound technologies;

b. Promoting research and development in environmentally sound technologies;

c. Assisting developing countries to use these technologies efficiently and to develop technologies suited to their particular circumstances;

d. Encouraging the environmentally sound use of new and renewable sources of energy;

e. Encouraging the environmentally sound and sustainable use of renewable natural resources.

(b) Minimizing the generation of wastes

4.19. At the same time, society needs to develop effective ways of dealing with the problem of disposing of mounting levels of waste products and materials. Governments, together with industry, households and the public, should make a concerted effort to reduce the generation of wastes and waste products by:

a. Encouraging recycling in industrial processes and at the consumed level;

b. Reducing wasteful packaging of products;

c. Encouraging the introduction of more environmentally sound products.

(c) Assisting individuals and households to make environmentally sound purchasing decisions

4.20. The recent emergence in many countries of a more environmentally conscious consumer public, combined with increased interest on the part of some industries in providing environmentally sound consumer products, is a significant development that should be encouraged. Governments and international organizations, together with the private sector, should develop criteria and methodologies for the assessment of environmental impacts and resource requirements throughout the full life cycle of products and processes. Results of those assessments should be transformed into clear indicators in order to inform consumers and decision makers.

4.21. Governments, in cooperation with industry and other relevant groups, should encourage expansion of environmental labelling and other environmentally related product information programmes designed to assist consumers to make informed choices.

4.22. They should also encourage the emergence of an informed consumer public and assist individuals and households to make environmentally informed choices by:

a. Providing information on the consequences of consumption choices and behaviour so as to encourage demand for environmentally sound products and use of products;

b. Making consumers aware of the health and environmental impact of products, through such means as consumer legislation and environmental labelling;

c. Encouraging specific consumer-oriented programmes, such as recycling and deposit/refund systems.

(d) Exercising leadership through government purchasing

4.23. Governments themselves also play a role in consumption, particularly in countries where the public sector plays a large role in the economy and can have a considerable influence on both corporate decisions and public perceptions. They should therefore review the purchasing policies of their agencies and departments so that they may improve, where possible, the environmental content of government procurement policies, without prejudice to international trade principles.

(e) Moving towards environmentally sound pricing

4.24. Without the stimulus of prices and market signals that make clear to producers and consumers the environmental costs of the consumption of energy, materials and natural resources and the generation of wastes, significant changes in consumption and production patterns seem unlikely to occur in the near future.

4.25. Some progress has begun in the use of appropriate economic instruments to influence consumer behaviour. These instruments include environmental charges and taxes, deposit/refund systems, etc. This process should be encouraged in the light of country-specific conditions.

(f) Reinforcing values that support sustainable consumption

4.26. Governments and private-sector organizations should promote more positive attitudes towards sustainable consumption through education, public awareness programmes and other means, such as positive advertising of products and services that utilize environmentally sound technologies or encourage sustainable production and consumption patterns. In the review of the implementation of Agenda 21, an assessment of the progress achieved in developing these national policies and strategies should be given due consideration.

Means of implementation

4.27. This programme is concerned primarily with changes in unsustainable patterns of consumption and production and values that encourage sustainable consumption patterns and lifestyles. It requires the combined efforts of Governments, consumers and producers. Particular attention should be paid to the significant role played by women and households as consumers and the potential impacts of their combined purchasing power on the economy.

Agenda 21 - Chapter 5
DEMOGRAPHIC DYNAMICS AND SUSTAINABILITY

5.1. This chapter contains the following programme areas:

a. Developing and disseminating knowledge concerning the links between demographic trends and factors and sustainable development;

b. Formulating integrated national policies for environment and development, taking into account demographic trends and factors;

c. Implementing integrated, environment and development programmes at the local level, taking into account demographic trends and factors.

PROGRAMME AREAS

A. Developing and disseminating knowledge concerning the links between demographic trends and factors and sustainable development

Basis for action

5.2. Demographic trends and factors and sustainable development have a synergistic relationship.

5.3. The growth of world population and production combined with unsustainable consumption patterns places increasingly severe stress on the life-supporting capacities of our planet. These interactive processes affect the use of land, water, air, energy and other resources. Rapidly growing cities, unless well-managed, face major environmental problems. The increase in both the number and size of cities calls for greater attention to issues of local government and municipal management. The human dimensions are key elements to consider in this intricate set of relationships and they should be adequately taken into consideration in comprehensive policies for sustainable development. Such policies should address the linkages of demographic trends and factors, resource use, appropriate technology dissemination, and development. Population policy should also recognize the role played by human beings in environmental and development concerns. There is a need to increase awareness of this issue among decision makers at all levels and to provide both better information on which to base national and international policies and a framework against which to interpret this information.

5.4. There is a need to develop strategies to mitigate both the adverse impact on the environment of human activities and the adverse impact of environmental change on human populations. The world's population is expected to exceed 8 billion by the year 2020. Sixty per cent of the world's population already live in coastal areas, while 65 per cent of cities with populations above 2.5 million are located along the world coasts; several of them are already at or below the present sea level.

Objectives

5.5. The following objectives should be achieved as soon as practicable:

a. To incorporate demographic trends and factors in the global analysis of environment and development issues;

b. To develop a better understanding of the relationships among demographic dynamics, technology, cultural behaviour, natural resources and life support systems;

c. To assess human vulnerability in ecologically sensitive areas and centres of population to determine the priorities for action at all levels, taking full account of community defined needs.

Activities

Research on the interaction between demographic trends and factors and sustainable development

5.6. Relevant international, regional and national institutions should consider undertaking the following activities:

a. Identifying the interactions between demographic processes, natural resources and life support systems, bearing in mind regional and subregional variations deriving from, inter alia, different levels of development;

b. Integrating demographic trends and factors into the ongoing study of environmental change, using the expertise of international, regional and national research networks and of local communities, first, to study the human dimensions of environmental change and, second, to identify vulnerable areas;

c. Identifying priority areas for action and developing strategies and programmes to mitigate the adverse impact of environmental change on human populations, and vice versa.

Means of implementation

(a) Financing and cost evaluation

5.7. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $10 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Strengthening research programmes that integrate population, environment and development

5.8. In order to integrate demographic analysis into a broader social science perspective on environment and development, interdisciplinary research should be increased. International institutions and networks of experts should enhance their scientific capacity, taking full account of community experience and knowledge, and should disseminate the experience gained in multidisciplinary approaches and in linking theory to action.

5.9. Better modelling capabilities should be developed, identifying the range of possible outcomes of current human activities, especially the interrelated impact of demographic trends and factors, per capita resource use and wealth distribution, as well as the major migration flows that may be expected with increasing climatic events and cumulative environmental change that may destroy people's local livelihoods.

(c) Developing information and public awareness

5.10. Socio-demographic information should be developed in a suitable format for interfacing with physical, biological and socio-economic data. Compatible spatial and temporal scales, cross-country and time-series information, as well as global behavioural indicators should be developed, learning from local communities' perceptions and attitudes.

5.11. Awareness should be increased at all levels concerning the need to optimize the sustainable use of resources through efficient resource management, taking into account the development needs of the populations of developing countries.

5.12. Awareness should be increased of the fundamental linkages between improving the status of women and demographic dynamics, particularly through women's access to education, primary and reproductive health care programmes, economic independence and their effective, equitable participation in all levels of decision-making.

5.13. Results of research concerned with sustainable development issues should be disseminated through technical reports, scientific journals, the media, workshops, forums or other means so that the information can be used by decision makers at all levels and increase public awareness.

(d) Developing and/or enhancing institutional capacity and collaboration

5.14. Collaboration and exchange of information should be increased between research institutions and international, regional and national agencies and all other sectors (including the private sector, local communities, non-governmental organizations and scientific institutions) from both the industrialized and developing countries, as appropriate.

5.15. Efforts should be intensified to enhance the capacities of national and local governments, the private sector and non-governmental organizations in developing countries to meet the growing needs for improved management of rapidly growing urban areas.

B. Formulating integrated national policies for environment and development, taking into account demographic trends and factors

Basis for action

5.16. Existing plans for sustainable development have generally recognized demographic trends and factors as elements that have a critical influence on consumption patterns, production, lifestyles and long-term sustainability. But in future, more attention will have to be given to these issues in general policy formulation and the design of development plans. To do this, all countries will have to improve their own capacities to assess the environment and development implications of their demographic trends and factors. They will also need to formulate and implement policies and action programmes where appropriate. Policies should be designed to address the consequences of population growth built into population momentum, while at the same time incorporating measures to bring about demographic transition. They should combine environmental concerns and population issues within a holistic view of development whose primary goals include the alleviation of poverty; secure livelihoods; good health; quality of life; improvement of the status and income of women and their access to schooling and professional training, as well as fulfilment of their personal aspirations; and empowerment of individuals and communities. Recognizing that large increases in the size and number of cities will occur in developing countries under any likely population scenario, greater attention should be given to preparing for the needs, in particular of women and children, for improved municipal management and local government.

Objective

5.17. Full integration of population concerns into national planning, policy and decision-making processes should continue. Population policies and programmes should be considered, with full recognition of women's rights.

Activities

5.18. Governments and other relevant actors could, inter alia, undertake the following activities, with appropriate assistance from aid agencies, and report on their status of implementation to the International Conference on Population and Development to be held in 1994, especially to its committee on population and environment.

(a) Assessing the implications of national demographic trends and factors

5.19. The relationships between demographic trends and factors and environmental change and between environmental degradation and the components of demographic change should be analysed.

5.20. Research should be conducted on how environmental factors interact with socio-economic factors as a cause of migration.

5.21. Vulnerable population groups (such as rural landless workers, ethnic minorities, refugees, migrants, displaced people, women heads of household) whose changes in demographic structure may have specific impacts on sustainable development should be identified.

5.22. An assessment should be made of the implications of the age structure of the population on resource demand and dependency burdens, ranging from educational expenses for the young to health care and support for the elderly, and on household income generation.

5.23. An assessment should also be made of national population carrying capacity in the context of satisfaction of human needs and sustainable development, and special attention should be given to critical resources, such as water and land, and environmental factors, such as ecosystem health and biodiversity.

5.24. The impact of national demographic trends and factors on the traditional livelihoods of indigenous groups and local communities, including changes in traditional land use because of internal population pressures, should be studied.

(b) Building and strengthening a national information base

5.25. National databases on demographic trends and factors and environment should be built and/or strengthened, disaggregating data by ecological region (ecosystem approach), and population/environment profiles should be established by region.

5.26. Methodologies and instruments should be developed to identify areas where sustainability is, or may be, threatened by the environmental effects of demographic trends and factors, incorporating both current and projected demographic data linked to natural environmental processes.

5.27. Case-studies of local level responses by different groups to demographic dynamics should be developed, particularly in areas subject to environmental stress and in deteriorating urban centres.

5.28. Population data should be disaggregated by, inter alia, sex and age in order to take into account the implications of the gender division of labour for the use and management of natural resources.

(c) Incorporating demographic features into policies and plans

5.29. In formulating human settlements policies, account should be taken of resource needs, waste production and ecosystem health.

5.30. 5.30. The direct and induced effects of demographic changes on environment and development programmes should, where appropriate, be integrated, and the impact on demographic features assessed.

5.31. 5.31. National population policy goals and programmes that are consistent with national environment and development plans for sustainability and in keeping with the freedom, dignity and personally held values of individuals should be established and implemented.

5.32. 5.32. Appropriate socio-economic policies for the young and the elderly, both in terms of family and state support systems, should be developed.

5.33. 5.33. Policies and programmes should be developed for handling the various types of migrations that result from or induce environmental disruptions, with special attention to women and vulnerable groups.

5.34. 5.34. Demographic concerns, including concerns for environmental migrants and displaced people, should be incorporated in the programmes for sustainable development of relevant international and regional institutions.

5.35. 5.35. National reviews should be conducted and the integration of population policies in national development and environment strategies should be monitored nationally.

Means of implementation

(a) Financing and cost evaluation

5.36. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $90 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Raising awareness of demographic and sustainable development interactions

5.37. Understanding of the interactions between demographic trends and factors and sustainable development should be increased in all sectors of society. Stress should be placed on local and national action. Demographic and sustainable development education should be coordinated and integrated in both the formal and non-formal education sectors. Particular attention should be given to population literacy programmes, notably for women. Special emphasis should be placed on the linkage between these programmes, primary environmental care and the provision of primary health care and services.

(c) Strengthening institutions

5.38. The capacity of national, regional and local structures to deal with issues relating to demographic trends and factors and sustainable development should be enhanced. This would involve strengthening the relevant bodies responsible for population issues to enable them to elaborate policies consistent with the national prospects for sustainable development. Cooperation among government, national research institutions, non-governmental organizations and local communities in assessing problems and evaluating policies should also be enhanced.

5.39. The capacity of the relevant United Nations organs, organizations and bodies, international and regional intergovernmental bodies, non-governmental organizations and local communities should, as appropriate, be enhanced to help countries develop sustainable development policies on request and, as appropriate, provide assistance to environmental migrants and displaced people.

5.40. Inter-agency support for national sustainable development policies and programmes should be improved through better coordination of population and environment activities.

(d) Promoting human resource development

5.41. The international and regional scientific institutions should assist Governments, upon request, to include concerns regarding the population/environment interactions at the global, ecosystem and micro-levels in the training of demographers and population and environment specialists. Training should include research on linkages and ways to design integrated strategies.

C. Implementing integrated environment and development programmes at the local level, taking into account demographic trends and factors

Basis for action

5.42. Population programmes are more effective when implemented together with appropriate cross-sectoral policies. To attain sustainability at the local level, a new framework is needed that integrates demographic trends and factors with such factors as ecosystem health, technology and human settlements, and with socio-economic structures and access to resources. Population programmes should be consistent with socio-economic and environmental planning. Integrated sustainable development programmes should closely correlate action on demographic trends and factors with resource management activities and development goals that meet the needs of the people concerned.

Objective

5.43. Population programmes should be implemented along with natural resource management and development programmes at the local level that will ensure sustainable use of natural resources, improve the quality of life of the people and enhance environmental quality.

Activities

5.44. Governments and local communities, including community-based women's organizations and national non-governmental organizations, consistent with national plans, objectives, strategies and priorities, could, inter alia, undertake the activities set out below with the assistance and cooperation of international organizations, as appropriate. Governments could share their experience in the implementation of Agenda 21 at the International Conference on Population and Development, to be held in 1994, especially its committee on population and environment.

(a) Developing a framework for action

5.45. An effective consultative process should be established and implemented with concerned groups of society where the formulation and decision-making of all components of the programmes are based on a nationwide consultative process drawing on community meetings, regional workshops and national seminars, as appropriate. This process should ensure that views of women and men on needs, perspective and constraints are equally well reflected in the design of programmes, and that solutions are rooted in specific experience. The poor and underprivileged should be priority groups in this process.

5.46. Nationally determined policies for integrated and multifaceted programmes, with special attention to women, to the poorest people living in critical areas and to other vulnerable groups should be implemented, ensuring the involvement of groups with a special potential to act as agents for change and sustainable development. Special emphasis should be placed on those programmes that achieve multiple objectives, encouraging sustainable economic development, and mitigating adverse impacts of demographic trends and factors, and avoiding long-term environmental damage. Food security, access to secure tenure, basic shelter, and essential infrastructure, education, family welfare, women's reproductive health, family credit schemes, reforestation programmes, primary environmental care, women's employment should, as appropriate, be included among other factors.

5.47. An analytical framework should be developed to identify complementary elements of sustainable development policies as well as the national mechanisms to monitor and evaluate their effects on population dynamics.

5.48. Special attention should be given to the critical role of women in population/environment programmes and in achieving sustainable development. Projects should take advantage of opportunities to link social, economic and environmental gains for women and their families. Empowerment of women is essential and should be assured through education, training and policies to accord and improve women's right and access to assets, human and civil rights, labour-saving measures, job opportunities and participation in decision-making. Population/environment programmes must enable women to mobilize themselves to alleviate their burden and improve their capacity to participate in and benefit from socio-economic development. Specific measures should be undertaken to close the gap between female and male illiteracy rates.

(b) Supporting programmes that promote changes in demographic trends and factors towards sustainability

5.49. Reproductive health programmes and services, should, as appropriate, be developed and enhanced to reduce maternal and infant mortality from all causes and enable women and men to fulfil their personal aspirations in terms of family size, in a way in keeping with their freedom and dignity and personally held values.

5.50. Governments should take active steps to implement, as a matter of urgency, in accordance with country-specific conditions and legal systems, measures to ensure that women and men have the same right to decide freely and responsibly on the number and spacing of their children, to have access to the information, education and means, as appropriate, to enable them to exercise this right in keeping with their freedom, dignity and personally held values taking into account ethical and cultural considerations.

5.51. Governments should take active steps to implement programmes to establish and strengthen preventive and curative health facilities that include women-centred, women-managed, safe and effective reproductive health care and affordable, accessible services, as appropriate, for the responsible planning of family size, in keeping with freedom, dignity and personally held values and taking into account ethical and cultural considerations. Programmes should focus on providing comprehensive health care, including pre-natal care, education and information on health and responsible parenthood and should provide the opportunity for all women to breast-feed fully, at least during the first four months post-partum. Programmes should fully support women's productive and reproductive roles and well being, with special attention to the need for providing equal and improved health care for all children and the need to reduce the risk of maternal and child mortality and sickness.

5.52. Consistent with national priorities, culturally based information and education programmes that transmit reproductive health messages to men and women that are easily understood should be developed.

(c) Creating appropriate institutional conditions

5.53. Constituencies and institutional conditions to facilitate the implementation of demographic activities should, as appropriate, be fostered. This requires support and commitment from political, indigenous, religious and traditional authorities, the private sector and the national scientific community. In developing these appropriate institutional conditions, countries should closely involve established national machinery for women.

5.54. Population assistance should be coordinated with bilateral and multilateral donors to ensure that population needs and requirements of all developing countries are addressed, fully respecting the overall coordinating responsibility and the choice and strategies of the recipient countries.

5.55. Coordination should be improved at local and international levels. Working practices should be enhanced in order to make optimum use of resources, draw on collective experience and improve the implementation of programmes. UNFPA and other relevant agencies should strengthen the coordination of international cooperation activities with recipient and donor countries in order to ensure that adequate funding is available to respond to growing needs.

5.56. Proposals should be developed for local, national and international population/environment programmes in line with specific needs for achieving sustainability. Where appropriate, institutional changes must be implemented so that old-age security does not entirely depend on input from family members.

Means of implementation

(a) Financing and cost evaluation

5.57. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $7 billion, including about $3.5 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial

terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Research

5.58. Research should be undertaken with a view to developing specific action programmes; it will be necessary to establish priorities between proposed areas of research.

5.59. Socio-demographic research should be conducted on how populations respond to a changing environment.

5.60. Understanding of socio-cultural and political factors that can positively influence acceptance of appropriate population policy instruments should be improved.

5.61. Surveys of changes in needs for appropriate services relating to responsible planning of family size, reflecting variations among different socio-economic groups and variations in different geographical regions should be undertaken.

(c) Human resource development and capacity-building

5.62. The areas of human resource development and capacity-building, with particular attention to the education and training of women, are areas of critical importance and are a very high priority in the implementation of population programmes.

5.63. Workshops to help programme and projects managers to link population programmes to other development and environmental goals should be conducted.

5.64. Educational materials, including guides/workbooks for planners and decision makers and other actors of population/environment/development programmes, should be developed.

5.65. Cooperation should be developed between Governments, scientific institutions and non-governmental organizations within the region, and similar institutions outside the region. Cooperation with local organizations should be fostered in ordered to raise awareness, engage in demonstration projects and report on the experience gained.

5.66. The recommendations contained in this chapter should in no way prejudice discussions at the International Conference on Population and Development in 1994, which will be the appropriate forum for dealing with population and development issues, taking into account the recommendations of the International Conference on Population, held in Mexico City in 1984, 1/ and the Forward-looking Strategies for the Advancement of Women, 2/ adopted by the World Conference to Review and Appraise the Achievements of the United Decade for Women: Equality, Development and Peace, held in Nairobi in 1985.

Notes

1/ Report of the International Conference on Population, Mexico City, 6-14 August 1984 (United Nations publication, Sales No. E.84.XIII.8), chap. I.

2/ Report of the World Conference to Review and Appraise the Achievements of the United Nations Decade for Women: Equality, Development and Peace, Nairobi, 15-26 July 1985 (United Nations publication, Sales No. E.84.IV.10), chap. I, sect. A.

Agenda 21 – Chapter 6
PROTECTING AND PROMOTING HUMAN HEALTH

6.1. Health and development are intimately interconnected. Both insufficient development leading to poverty and inappropriate development resulting in overconsumption, coupled with an expanding world population, can result in severe environmental health problems in both developing and developed nations. Action items under Agenda 21 must address the primary health needs of the world's population, since they are integral to the achievement of the goals of sustainable development and primary environmental care. The linkage of health, environmental and socio-economic improvements requires intersectoral efforts. Such efforts, involving education, housing, public works and community groups, including businesses, schools and universities and religious, civic and cultural organizations, are aimed at enabling people in their communities to ensure sustainable development. Particularly relevant is the inclusion of prevention programmes rather than relying solely on remediation and treatment. Countries ought to develop plans for priority actions, drawing on the programme areas in this chapter, which are based on cooperative planning by the various levels of government, non-governmental organizations and local communities. An appropriate international organization, such as WHO, should coordinate these activities.

6.2. The following programme areas are contained in this chapter:

a. Meeting primary health care needs, particularly in rural areas;

b. Control of communicable diseases;

c. Protecting vulnerable groups;

d. Meeting the urban health challenge;

e. Reducing health risks from environmental pollution and hazards.

PROGRAMME AREAS

A. Meeting primary health care needs, particularly in rural areas Basis for action

6.3. Health ultimately depends on the ability to manage successfully the interaction between the physical, spiritual, biological and economic/social environment. Sound development is not possible without a healthy population; yet most developmental activities affect the environment to some degree, which in turn causes or exacerbates many health problems. Conversely, it is the very lack of development that adversely affects the health condition of many people, which can be alleviated only through development. The health sector cannot meet basic needs and objectives on its own; it is dependent on social, economic and spiritual development, while directly contributing to such development. It is also dependent on a healthy environment, including the provision of a safe water supply and sanitation and the promotion of a safe food supply and proper nutrition. Particular attention should be directed towards food safety, with priority placed on the elimination of food contamination; comprehensive and sustainable water policies to ensure safe drinking water and sanitation to preclude both microbial and chemical contamination; and promotion of health education, immunization and provision of essential drugs. Education and appropriate services regarding responsible planning of family size, with respect for cultural, religious and social aspects, in keeping with freedom, dignity and personally held values and taking into account ethical and cultural considerations, also contribute to these intersectoral activities.

Objectives

6.4. Within the overall strategy to achieve health for all by the year 2000, the objectives are to meet the basic health needs of rural peri-urban and urban populations; to provide the necessary specialized environmental health services; and to coordinate the involvement of citizens, the health sector, the health-related sectors and relevant non-health sectors (business, social, educational and religious institutions) in solutions to health problems. As a matter of priority, health service coverage should be achieved for population groups in greatest need, particularly those living in rural areas.

Activities

6.5. National Governments and local authorities, with the support of relevant non-governmental organizations and international organizations, in the light of countries' specific conditions and needs, should strengthen their health sector programmes, with special attention to rural needs, to:

(a) Build basic health infrastructures, monitoring and planning systems:

i. Develop and strengthen primary health care systems that are practical, community-based, scientifically sound, socially acceptable and appropriate to their needs and that meet basic health needs for clean water, safe food and sanitation;

ii. Support the use and strengthening of mechanisms that improve coordination between health and related sectors at all appropriate levels of government, and in communities and relevant organizations;

iii. Develop and implement rational and affordable approaches to the establishment and maintenance of health facilities;

iv. Ensure and, where appropriate, increase provision of social services support;

v. Develop strategies, including reliable health indicators, to monitor the progress and evaluate the effectiveness of health programmes;

vi. Explore ways to finance the health system based on the assessment of the resources needed and identify the various financing alternatives;

vii. Promote health education in schools, information exchange, technical support and training;

viii. Support initiatives for self-management of services by vulnerable groups;

ix. Integrate traditional knowledge and experience into national health systems, as appropriate;

x. Promote the provisions for necessary logistics for outreach activities, particularly in rural areas;

xi. Promote and strengthen community-based rehabilitation activities for the rural handicapped.

(b) Support research and methodology development:

i. Establish mechanisms for sustained community involvement in environmental health activities, including optimization of the appropriate use of community financial and human resources;

ii. Conduct environmental health research, including behaviour research and research on ways to increase coverage and ensure greater utilization of services by peripheral, underserved and vulnerable populations, as appropriate to good prevention services and health care;

iii. Conduct research into traditional knowledge of prevention and curative health practices.

Means of implementation

(a) Financing and cost evaluation

6.6. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $40 billion, including about $5 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

6.7. New approaches to planning and managing health care systems and facilities should be tested, and research on ways of integrating appropriate technologies into health infrastructures supported. The development of scientifically sound health technology should enhance adaptability to local needs and maintainability by community resources, including the maintenance and repair of equipment used in health care. Programmes to facilitate the transfer and sharing of information and expertise should be developed, including communication methods and educational materials.

(c) Human resource development

6.8. Intersectoral approaches to the reform of health personnel development should be strengthened to ensure its relevance to the "Health for All" strategies. Efforts to enhance managerial skills at the district level should be supported, with the aim of ensuring the systematic development and efficient operation of the basic health system. Intensive, short, practical training programmes with emphasis on skills in effective communication, community organization and facilitation of behaviour change should be developed in order to prepare the local personnel of all sectors involved in social development for carrying out their respective roles. In cooperation with the education sector, special health education programmes should be developed focusing on the role of women in the health-care system.

(d) Capacity-building

6.9. Governments should consider adopting enabling and facilitating strategies to promote the participation of communities in meeting their own needs, in addition to providing direct support to the provision of health-care services. A major focus should be the preparation of community-based health and health-related workers to assume an active role in community health education, with emphasis on team work, social mobilization and the support of other development workers. National programmes should cover district health systems in urban, peri-urban and rural areas, the delivery of health programmes at the district level, and the development and support of referral services.

B. Control of communicable diseases

Basis for action

6.10. Advances in the development of vaccines and chemotherapeutic agents have brought many communicable diseases under control. However, there remain many important communicable diseases for which environmental control measures are indispensable, especially in the field of water supply and sanitation. Such diseases include cholera, diarrhoeal diseases, leishmaniasis, malaria and schistosomiasis. In all such instances, the environmental measures, either as an integral part of primary health care or undertaken outside the health sector, form an indispensable component of overall disease control strategies, together with health and hygiene education, and in some cases, are the only component.

6.11. With HIV infection levels estimated to increase to 30-40 million by the year 2000, the socio-economic impact of the pandemic is expected to be devastating for all countries, and increasingly for women and children. While direct health costs will be substantial, they will be dwarfed by the indirect costs of the pandemic - mainly costs associated with the loss of income and decreased productivity of the workforce. The pandemic will inhibit growth of the service and industrial sectors and significantly increase the costs of human capacity-building and retraining. The agricultural sector is particularly affected where production is labour-intensive.

Objectives

6.12. A number of goals have been formulated through extensive consultations in various international forums attended by virtually all Governments, relevant United Nations organizations (including WHO, UNICEF, UNFPA, UNESCO, UNDP and the World Bank) and a number of non-governmental organizations. Goals (including but not limited to those listed below) are recommended for implementation by all countries where they are applicable, with appropriate adaptation to the specific situation of each country in terms of phasing, standards, priorities and availability of resources, with respect for cultural, religious and social aspects, in keeping with freedom, dignity and personally held values and taking into account ethical considerations. Additional goals that are particularly relevant to a country's specific situation should be added in the country's national plan of action (Plan of Action for Implementing the World Declaration on the Survival, Protection and Development of Children in the 1990s). 1/ Such national level action plans should be coordinated and monitored from within the public health sector. Some major goals are:

a. By the year 2000, to eliminate guinea worm disease (dracunculiasis);

b. By the year 2000, eradicate polio;

c. By the year 2000, to effectively control onchocerciasis (river blindness) and leprosy;

d. By 1995, to reduce measles deaths by 95 per cent and reduce measles cases by 90 per cent compared with pre-immunization levels;

e. By continued efforts, to provide health and hygiene education and to ensure universal access to safe drinking water and universal access to sanitary measures of excreta disposal, thereby markedly reducing waterborne diseases such as cholera and schistosomiasis and reducing:

    i. By the year 2000, the number of deaths from childhood diarrhoea in developing countries by 50 to 70 per cent;

    ii. By the year 2000, the incidence of childhood diarrhoea in developing countries by at least 25 to 50 per cent;

f. By the year 2000, to initiate comprehensive programmes to reduce mortality from acute respiratory infections in children under five years by at least one third, particularly in countries with high infant mortality;

g. By the year 2000, to provide 95 per cent of the world's child population with access to appropriate care for acute respiratory infections within the community and at first referral level;

h. By the year 2000, to institute anti-malaria programmes in all countries where malaria presents a significant health problem and maintain the transmission-free status of areas freed from endemic malaria;

i. By the year 2000, to implement control programmes in countries where major human parasitic infections are endemic and achieve an overall reduction in the prevalence of schistosomiasis and of other trematode infections by 40 per cent and 25 per cent, respectively, from a 1984 baseline, as well as a marked reduction in incidence, prevalence and intensity of filarial infections;

j. To mobilize and unify national and international efforts against AIDS to prevent infection and to reduce the personal and social impact of HIV infection;

k. To contain the resurgence of tuberculosis, with particular emphasis on multiple antibiotic resistant forms;

l. To accelerate research on improved vaccines and implement to the fullest extent possible the use of vaccines in the prevention of disease.

Activities

6.13. Each national Government, in accordance with national plans for public health, priorities and objectives, should consider developing a national health action plan with appropriate international assistance and support, including, at a minimum, the following components:

a. National public health systems:

   i. Programmes to identify environmental hazards in the causation of communicable diseases;

   ii. Monitoring systems of epidemiological data to ensure adequate forecasting of the introduction, spread or aggravation of communicable diseases;

   iii. Intervention programmes, including measures consistent with the principles of the global AIDS strategy;

   iv. Vaccines for the prevention of communicable diseases;

b. Public information and health education: Provide education and disseminate information on the risks of endemic communicable diseases and build awareness on environmental methods for control of communicable diseases to enable communities to play a role in the control of communicable diseases;

c. Intersectoral cooperation and coordination:

   i. Second experienced health professionals to relevant sectors, such as planning, housing and agriculture;

   ii. Develop guidelines for effective coordination in the areas of professional training, assessment of risks and development of control technology;

d. Control of environmental factors that influence the spread of communicable diseases: Apply methods for the prevention and control of communicable diseases, including water supply and sanitation control, water pollution control, food quality control, integrated vector control, garbage collection and disposal and environmentally sound irrigation practices;

e. Primary health care system:

   i. Strengthen prevention programmes, with particular emphasis on adequate and balanced nutrition;

   ii. Strengthen early diagnostic programmes and improve capacities for early preventative/treatment action;

   iii. Reduce the vulnerability to HIV infection of women and their offspring;

f. Support for research and methodology development:

   - i. Intensify and expand multidisciplinary research, including focused efforts on the mitigation and environmental control of tropical diseases;
   - ii. Carry out intervention studies to provide a solid epidemiological basis for control policies and to evaluate the efficiency of alternative approaches;
   - iii. Undertake studies in the population and among health workers to determine the influence of cultural, behavioural and social factors on control policies;

g. Development and dissemination of technology:

   - i. Develop new technologies for the effective control of communicable diseases;
   - ii. Promote studies to determine how to optimally disseminate results from research;
   - iii. Ensure technical assistance, including the sharing of knowledge and know-how.

Means of implementation

(a) Financing and cost evaluation

6.14. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $4 billion, including about $900 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

6.15. Efforts to prevent and control diseases should include investigations of the epidemiological, social and economic bases for the development of more effective national strategies for the integrated control of communicable diseases. Cost-effective methods of environmental control should be adapted to local developmental conditions.

(c) Human resource development

6.16. National and regional training institutions should promote broad intersectoral approaches to prevention and control of communicable diseases, including training in epidemiology and community prevention and control, immunology, molecular biology and the application of new vaccines. Health education materials should be developed for use by community workers and for the education of mothers for the prevention and treatment of diarrhoeal diseases in the home.

(d) Capacity-building

6.17. The health sector should develop adequate data on the distribution of communicable diseases, as well as the institutional capacity to respond and collaborate with other sectors for prevention, mitigation and correction of communicable disease hazards through environmental protection. The advocacy at policy- and decision-making levels should be gained, professional and societal support mobilized, and communities organized in developing self-reliance.

C. Protecting vulnerable groups

Basis for action

6.18. In addition to meeting basic health needs, specific emphasis has to be given to protecting and educating vulnerable groups, particularly infants, youth, women, indigenous people and the very poor as a prerequisite for sustainable development. Special attention should also be paid to the health needs of the elderly and disabled population.

6.19. Infants and children. Approximately one third of the world's population are children under 15 years old. At least 15 million of these children die annually from such preventable causes as birth trauma, birth asphyxia, acute respiratory infections, malnutrition, communicable diseases and diarrhoea. The health of children is affected more severely than other population groups by malnutrition and adverse environmental factors, and many children risk exploitation as cheap labour or in prostitution.

6.20. Youth. As has been the historical experience of all countries, youth are particularly vulnerable to the problems associated with economic development, which often weakens traditional forms of social support essential for the healthy development, of young people. Urbanization and changes in social mores have increased substance abuse, unwanted pregnancy and sexually transmitted diseases, including AIDS. Currently more than half of all people alive are under the age of 25, and four of every five live in developing countries. Therefore it is important to ensure that historical experience is not replicated.

6.21. Women. In developing countries, the health status of women remains relatively low, and during the 1980s poverty, malnutrition and general ill-health in women were even rising. Most women in developing countries still do not have adequate basic educational opportunities and they lack the means of promoting their health, responsibly controlling their reproductive life and improving their socio-economic status. Particular attention should be given to the provision of pre-natal care to ensure healthy babies.

6.22. Indigenous people and their communities. Indigenous people had their communities make up a significant percentage of global population. The outcomes of their experience have tended to be very similar in that the basis of their relationship with traditional lands has been fundamentally changed. They tend to feature disproportionately in unemployment, lack of housing, poverty and poor health. In many countries the number of indigenous people is growing faster than the general population. Therefore it is important to target health initiatives for indigenous people.

Objectives

6.23. The general objectives of protecting vulnerable groups are to ensure that all such individuals should be allowed to develop to their full potential (including healthy physical, mental and spiritual development); to ensure that young people can develop, establish and maintain healthy lives; to allow women to perform their key role in society; and to support indigenous people through educational, economic and technical opportunities.

6.24. Specific major goals for child survival, development and protection were agreed upon at the World Summit for Children and remain valid also for Agenda 21. Supporting and sectoral goals cover women's health and education, nutrition, child health, water and sanitation, basic education and children in difficult circumstances.

6.25. Governments should take active steps to implement, as a matter of urgency, in accordance with country specific conditions and legal systems, measures to ensure that women and men have the same right to decide freely and responsibly on the number and spacing of their children, to have access to the information, education and means, as appropriate, to enable them to exercise this right in keeping with their freedom, dignity and personally held values, taking into account ethical and cultural considerations.

6.26. Governments should take active steps to implement programmes to establish and strengthen preventive and curative health facilities which include women-centred, women-managed, safe and effective reproductive health care and affordable, accessible services, as appropriate, for the responsible planning of family size, in keeping with freedom, dignity and personally held values and taking into account ethical and cultural considerations. Programmes should focus on providing comprehensive health care, including pre-natal care, education and information on health and responsible parenthood and should provide the opportunity for all women to breast-feed fully, at least during the first four months post-partum. Programmes should fully support women's productive and reproductive roles and well being, with special attention to the need for providing equal and improved health care for all children and the need to reduce the risk of maternal and child mortality and sickness.

Activities

6.27. National Governments, in cooperation with local and non-governmental organizations, should initiate or enhance programmes in the following areas:

a. Infants and children:

   i. Strengthen basic health-care services for children in the context of primary health-care delivery, including prenatal care, breast-feeding, immunization and nutrition programmes;

   ii. Undertake widespread adult education on the use of oral rehydration therapy for diarrhoea, treatment of respiratory infections and prevention of communicable diseases;

   iii. Promote the creation, amendment and enforcement of a legal framework protecting children from sexual and workplace exploitation;

   iv. Protect children from the effects of environmental and occupational toxic compounds;

b. Youth: Strengthen services for youth in health, education and social sectors in order to provide better information, education, counselling and treatment for specific health problems, including drug abuse;

c. Women:

   i. Involve women's groups in decision-making at the national and community levels to identify health risks and incorporate health issues in national action programmes on women and development;

   ii. Provide concrete incentives to encourage and maintain attendance of women of all ages at school and adult education courses, including health education and training in primary, home and maternal health care;

   iii. Carry out baseline surveys and knowledge, attitude and practice studies on the health and nutrition of women throughout their life cycle, especially as related to the impact of environmental degradation and adequate resources;

d. Indigenous people and their communities:

   i. Strengthen, through resources and self-management, preventative and curative health services;

   ii. Integrate traditional knowledge and experience into health systems.

Means of implementation

(a) Financing and cost evaluation

6.28. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $3.7 billion, including about $400 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

6.29. Educational, health and research institutions should be strengthened to provide support to improve the health of vulnerable groups. Social research on the specific problems of these groups should be expanded and methods for implementing flexible pragmatic solutions explored, with emphasis on preventive measures. Technical support should be provided to Governments, institutions and non-governmental organizations for youth, women and indigenous people in the health sector.

(c) Human resources development

6.30. The development of human resources for the health of children, youth and women should include reinforcement of educational institutions, promotion of interactive methods of education for health and increased use of mass media in disseminating information to the target groups. This requires the training of more community health workers, nurses, midwives, physicians, social scientists and educators, the education of mothers, families and communities and the strengthening of ministries of education, health, population etc.

(d) Capacity-building

6.31. Governments should promote, where necessary: (i) the organization of national, intercountry and interregional symposia and other meetings for the exchange of information among agencies and groups concerned with the health of children, youth, women and indigenous people, and (ii) women's organizations, youth groups and indigenous people's organizations to facilitate health and consult them on the creation, amendment and enforcement of legal frameworks to ensure a healthy environment for children, youth, women and indigenous peoples.

D. Meeting the urban health challenge

Basis for action

6.32. For hundreds of millions of people, the poor living conditions in urban and peri-urban areas are destroying lives, health, and social and moral values. Urban growth has outstripped society's capacity to meet human needs, leaving hundreds of millions of people with inadequate incomes, diets, housing and services. Urban growth exposes populations to serious environmental hazards and has outstripped the capacity of municipal and local governments to provide the environmental health services that the people need. All too often, urban development is associated with destructive effects on the physical environment and the resource base needed for sustainable development. Environmental pollution in urban areas is associated with excess morbidity and mortality. Overcrowding and inadequate housing contribute to respiratory diseases, tuberculosis, meningitis and other diseases. In urban environments, many factors that affect human health are outside the health sector. Improvements in urban health therefore will depend on coordinated action by all levels of government, health care providers, businesses, religious groups, social and educational institutions and citizens.

Objectives

6.33. The health and well-being of all urban dwellers must be improved so that they can contribute to economic and social development. The global objective is to achieve a 10 to 40 per cent improvement in health indicators by the year 2000. The same rate of improvement should be achieved for environmental, housing and health service indicators. These include the development of quantitative objectives for infant mortality, maternal mortality, percentage of low birth weight newborns and specific indicators (e.g. tuberculosis as an indicator of crowded housing, diarrhoeal diseases as indicators of inadequate water and sanitation, rates of industrial and transportation accidents that indicate possible opportunities for prevention of injury, and social problems such as drug abuse, violence and crime that indicate underlying social disorders).

Activities

6.34. Local authorities, with the appropriate support of national Governments and international organizations should be encouraged to take effective measures to initiate or strengthen the following activities:

a. Develop and implement municipal and local health plans:

   i. Establish or strengthen intersectoral committees at both the political and technical level, including active collaboration on linkages with scientific, cultural, religious, medical, business, social and other city institutions, using networking arrangements;

   ii. Adopt or strengthen municipal or local "enabling strategies" that emphasize "doing with" rather than "doing for" and create supportive environments for health;

   iii. Ensure that public health education in schools, workplace, mass media etc. is provided or strengthened;

   iv. Encourage communities to develop personal skills and awareness of primary health care;

   v. Promote and strengthen community-based rehabilitation activities for the urban and peri-urban disabled and the elderly;

b. Survey, where necessary, the existing health, social and environmental conditions in cities, including documentation of intra-urban differences;

c. Strengthen environmental health services:

   i. Adopt health impact and environmental impact assessment procedures;

   ii. Provide basic and in-service training for new and existing personnel;

d. Establish and maintain city networks for collaboration and exchange of models of good practice.

Means of implementation

(a) Financing and cost evaluation

6.35. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $222 million, including about $22 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

6.36. Decision-making models should be further developed and more widely used to assess the costs and the health and environment impacts of alternative technologies and strategies. Improvement in urban development and management requires better national and municipal statistics based on practical, standardized indicators. Development of methods is a priority for the measurement of intra-urban and intra-district variations in health status and environmental conditions, and for the application of this information in planning and management.

(c) Human resources development

6.37. Programmes must supply the orientation and basic training of municipal staff required for the healthy city processes. Basic and in-service training of environmental health personnel will also be needed.

(d) Capacity-building

6.38. The programme is aimed towards improved planning and management capabilities in the municipal and local government and its partners in central Government, the private sector and universities. Capacity development should be focused on obtaining sufficient information, improving coordination mechanisms linking all the key actors, and making better use of available instruments and resources for implementation.

E. Reducing health risks from environmental pollution and hazards

Basis for action

6.39. In many locations around the world the general environment (air, water and land), workplaces and even individual dwellings are so badly polluted that the health of hundreds of millions of people is adversely affected. This is, inter alia, due to past and present developments in consumption and production patterns and lifestyles, in energy production and use, in industry, in transportation etc., with little or no regard for environmental protection. There have been notable improvements in some countries, but deterioration of the environment continues. The ability of countries to tackle pollution and health problems is greatly restrained because of lack of resources. Pollution control and health protection measures have often not kept pace with economic development. Considerable development-related environmental health hazards exist in the newly industrializing countries. Furthermore, the recent analysis of WHO has clearly established the interdependence among the factors of health, environment and development and has revealed that most countries are lacking such integration as would lead to an effective pollution control mechanism. 2/ Without prejudice to such criteria as may be agreed upon by the international community, or to standards which will have to be determined nationally, it will be essential in all cases to consider the systems of values prevailing in each country and the extent of the applicability of standards that are valid for the most advanced countries but may be inappropriate and of unwarranted social cost for the developing countries.

Objectives

6.40. The overall objective is to minimize hazards and maintain the environment to a degree that human health and safety is not impaired or endangered and yet encourage development to proceed. Specific programme objectives are:

a. By the year 2000, to incorporate appropriate environmental and health safeguards as part of national development programmes in all countries;

b. By the year 2000, to establish, as appropriate, adequate national infrastructure and programmes for providing environmental injury, hazard surveillance and the basis for abatement in all countries;

c. By the year 2000, to establish, as appropriate, integrated programmes for tackling pollution at the source and at the disposal site, with a focus on abatement actions in all countries;

d. To identify and compile, as appropriate, the necessary statistical information on health effects to support cost/benefit analysis, including environmental health impact assessment for pollution control, prevention and abatement measures.

Activities

6.41. Nationally determined action programmes, with international assistance, support and coordination, where necessary, in this area should include:

a. Urban air pollution:

   i. Develop appropriate pollution control technology on the basis of risk assessment and epidemiological research for the introduction of environmentally sound production processes and suitable safe mass transport;

   ii. Develop air pollution control capacities in large cities, emphasizing enforcement programmes and using monitoring networks, as appropriate;

b. Indoor air pollution:

   i. Support research and develop programmes for applying prevention and control methods to reducing indoor air pollution, including the provision of economic incentives for the installation of appropriate technology;

   ii. Develop and implement health education campaigns, particularly in developing countries, to reduce the health impact of domestic use of biomass and coal;

c. Water pollution:

   i. Develop appropriate water pollution control technologies on the basis of health risk assessment;

   ii. Develop water pollution control capacities in large cities;

d. Pesticides: Develop mechanisms to control the distribution and use of pesticides in order to minimize the risks to human health by transportation, storage, application and residual effects of pesticides used in agriculture and preservation of wood;

e. Solid waste:

   i. Develop appropriate solid waste disposal technologies on the basis of health risk assessment;

   ii. Develop appropriate solid waste disposal capacities in large cities;

f. Human settlements: Develop programmes for improving health conditions in human settlements, in particular within slums and non-tenured settlements, on the basis of health risk assessment;

g. Noise: Develop criteria for maximum permitted safe noise exposure levels and promote noise assessment and control as part of environmental health programmes;

h. Ionizing and non-ionizing radiation: Develop and implement appropriate national legislation, standards and enforcement procedures on the basis of existing international guidelines;

    i. Effects of ultraviolet radiation: Undertake, as a matter of urgency, research on the effects on human health of the increasing ultraviolet radiation reaching the earth's surface as a consequence of depletion of the stratospheric ozone layer;
    ii. On the basis of the outcome of this research, consider taking appropriate remedial measures to mitigate the above-mentioned effects on human beings;

i. Industry and energy production:
    i. Establish environmental health impact assessment procedures for the planning and development of new industries and energy facilities;
    ii. Incorporate appropriate health risk analysis in all national programmes for pollution control and management, with particular emphasis on toxic compounds such as lead;
    iii. Establish industrial hygiene programmes in all major industries for the surveillance of workers' exposure to health hazards;
    iv. Promote the introduction of environmentally sound technologies within the industry and energy sectors;

j. Monitoring and assessment: Establish, as appropriate, adequate environmental monitoring capacities for the surveillance of environmental quality and the health status of populations;

k. Injury monitoring and reduction:
    i. Support, as appropriate, the development of systems to monitor the incidence and cause of injury to allow well-targeted intervention/prevention strategies;
    ii. Develop, in accordance with national plans, strategies in all sectors (industry, traffic and others) consistent with the WHO safe cities and safe communities programmes, to reduce the frequency and severity of injury;
    iii. Emphasize preventive strategies to reduce occupationally derived diseases and diseases caused by environmental and occupational toxins to enhance worker safety;

l. Research promotion and methodology development:
    i. Support the development of new methods for the quantitative assessment of health benefits and cost associated with different pollution control strategies;
    ii. Develop and carry out interdisciplinary research on the combined health effects of exposure to multiple environmental hazards, including epidemiological investigations of long-term exposures to low levels of pollutants and the use of biological markers capable of estimating human exposures, adverse effects and susceptibility to environmental agents.

Means of implementation

(a) Financing and cost evaluation

6.42. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $3 billion, including about $115 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

6.43. Although technology to prevent or abate pollution is readily available for a large number of problems, for programme and policy development countries should undertake research within an intersectoral framework. Such efforts should include collaboration with the business sector. Cost/effect analysis and environmental impact assessment methods should be developed through cooperative international programmes and applied to the setting of priorities and strategies in relation to health and development.

6.44. In the activities listed in paragraph 6.41 (a) to (m) above, developing country efforts should be facilitated by access to and transfer of technology, know-how and information, from the repositories of such knowledge and technologies, in conformity with chapter 34.

(c) Human resource development

6.45. Comprehensive national strategies should be designed to overcome the lack of qualified human resources, which is a major impediment to progress in dealing with environmental health hazards. Training should include environmental and health officials at all levels from managers to inspectors. More emphasis needs to be placed on including the subject of environmental health in the curricula of secondary schools and universities and on educating the public.

(d) Capacity-building

6.46. Each country should develop the knowledge and practical skills to foresee and identify environmental health hazards, and the capacity to reduce the risks. Basic capacity requirements must include knowledge about environmental health problems and awareness on the part of leaders, citizens and specialists; operational mechanisms for intersectoral and intergovernmental cooperation in development planning and management and in combating pollution; arrangements for involving private and community interests in dealing with social issues; delegation of authority and distribution of resources to intermediate and local levels of government to provide front-line capabilities to meet environmental health needs.

Notes

1/ A/45/625, annex.

2/ Report of the WHO Commission on Health and Environment (Geneva, forthcoming).

Agenda 21 – Chapter 7

PROMOTING SUSTAINABLE HUMAN SETTLEMENT DEVELOPMENT

7.1. In industrialized countries, the consumption patterns of cities are severely stressing the global ecosystem, while settlements in the developing world need more raw material, energy, and economic development simply to overcome basic economic and social problems. Human settlement conditions in many parts of the world, particularly the developing countries, are deteriorating mainly as a result of the low levels of investment in the sector attributable to the overall resource constraints in these countries. In the low-income countries for which recent data are available, an average of only 5.6 per cent of central government expenditure went to housing, amenities, social security and welfare. 1/ Expenditure by international support and finance organizations is equally low. For example, only 1 per cent of the United Nations system's total grant-financed expenditures in 1988 went to human settlements, 2/ while in 1991, loans from the World Bank and the International Development Association (IDA) for urban development and water supply and sewerage amounted to 5.5 and 5.4 per cent, respectively, of their total lending. 3/

7.2. On the other hand, available information indicates that technical cooperation activities in the human settlement sector generate considerable public and private sector investment. For example, every dollar of UNDP technical cooperation expenditure on human settlements in 1988 generated a follow-up investment of $122, the highest of all UNDP sectors of assistance. 4/

7.3. This is the foundation of the "enabling approach" advocated for the human settlement sector. External assistance will help to generate the internal resources needed to improve the living and working environments of all people by the year 2000 and beyond, including the growing number of unemployed - the no-income group. At the same time the environmental implications of urban development should be recognized and addressed in an integrated fashion by all countries, with high priority being given to the needs of the urban and rural poor, the unemployed and the growing number of people without any source of income.

Human settlement objective

7.4. The overall human settlement objective is to improve the social, economic and environmental quality of human settlements and the living and working environments of all people, in particular the urban and rural poor. Such improvement should be based on technical cooperation activities, partnerships among the public, private and community sectors and participation in the decision-making process by community groups and special interest groups such as women, indigenous people, the elderly and the disabled. These approaches should form the core principles of national settlement strategies. In developing these strategies, countries will need to set priorities among the eight programme areas in this chapter in accordance with their national plans and objectives, taking fully into account their social and cultural capabilities. Furthermore, countries should make appropriate provision to monitor the impact of their strategies on marginalized and disenfranchised groups, with particular reference to the needs of women.

7.5. The programme areas included in this chapter are:

a. Providing adequate shelter for all;

b. Improving human settlement management;

c. Promoting sustainable land-use planning and management;

d. Promoting the integrated provision of environmental infrastructure: water, sanitation, drainage and solid-waste management;

e. Promoting sustainable energy and transport systems in human settlements;

f. Promoting human settlement planning and management in disaster-prone areas;

g. Promoting sustainable construction industry activities;

h. Promoting human resource development and capacity-building for human settlement development.

PROGRAMME AREAS

A. Providing adequate shelter for all

Basis for action

7.6. Access to safe and healthy shelter is essential to a person's physical, psychological, social and economic well-being and should be a fundamental part of national and international action. The right to adequate housing as a basic human right is enshrined in the Universal Declaration of Human Rights and the International Covenant on Economic, Social and Cultural Rights. Despite this, it is estimated that at the present time, at least 1 billion people do not have access to safe and healthy shelter and that if appropriate action is not taken, this number will increase dramatically by the end of the century and beyond.

7.7. A major global programme to address this problem is the Global Strategy for Shelter to the Year 2000, adopted by the General Assembly in December 1988 (resolution 43/181, annex). Despite its widespread endorsement, the Strategy needs a much greater level of political and financial support to enable it to reach its goal of facilitating adequate shelter for all by the end of the century and beyond.

Objective

7.8. The objective is to achieve adequate shelter for rapidly growing populations and for the currently deprived urban and rural poor through an enabling approach to shelter development and improvement that is environmentally sound.

Activities

7.9. The following activities should be undertaken:

a. As a first step towards the goal of providing adequate shelter for all, all countries should take immediate measures to provide shelter to their homeless poor, while the international community and financial institutions should undertake actions to support the efforts of the developing countries to provide shelter to the poor;

b. All countries should adopt and/or strengthen national shelter strategies, with targets based, as appropriate, on the principles and recommendations contained in the Global Strategy for Shelter to the Year 2000. People should be protected by law against unfair eviction from their homes or land;

c. All countries should, as appropriate, support the shelter efforts of the urban and rural poor, the unemployed and the no-income group by adopting and/or adapting existing codes and regulations, to facilitate their access to land, finance and low-cost building materials and by actively promoting the regularization and upgrading of informal settlements and urban slums as an expedient measure and pragmatic solution to the urban shelter deficit;

d. All countries should, as appropriate, facilitate access of urban and rural poor to shelter by adopting and utilizing housing and finance schemes and new innovative mechanisms adapted to their circumstances;

e. All countries should support and develop environmentally compatible shelter strategies at national, state/provincial and municipal levels through partnerships among the private, public and community sectors and with the support of community-based organizations;

f. All countries, especially developing ones, should, as appropriate, formulate and implement programmes to reduce the impact of the phenomenon of rural to urban drift by improving rural living conditions;

g. All countries, where appropriate, should develop and implement resettlement programmes that address the specific problems of displaced populations in their respective countries;

h. All countries should, as appropriate, document and monitor the implementation of their national shelter strategies by using, inter alia, the monitoring guidelines adopted by the Commission on Human Settlements and the shelter performance indicators being produced jointly by the United Nations Centre for Human Settlements (Habitat) and the World Bank;

i. Bilateral and multilateral cooperation should be strengthened in order to support the implementation of the national shelter strategies of developing countries;

j. Global progress reports covering national action and the support activities of international organizations and bilateral donors should be produced and disseminated on a biennial basis, as requested in the Global Strategy for Shelter to the Year 2000.

Means of implementation

(a) Financing and cost evaluation

7.10. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $75 billion, including about $10 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

7.11. The requirements under this heading are addressed in each of the other programme areas included in the present chapter.

(c) Human resource development and capacity-building

7.12. Developed countries and funding agencies should provide specific assistance to developing countries in adopting an enabling approach to the provision of shelter for all, including the no-income group, and covering research institutions and training activities for government officials, professionals, communities and non-governmental organizations and by strengthening local capacity for the development of appropriate technologies.

B. Improving human settlement management

Basis for action

7.13. By the turn of the century, the majority of the world's population will be living in cities. While urban settlements, particularly in developing countries, are showing many of the symptoms of the global environment and development crisis, they nevertheless generate 60 per cent of gross national product and, if properly managed, can develop the capacity to sustain their productivity, improve the living conditions of their residents and manage natural resources in a sustainable way.

7.14. Some metropolitan areas extend over the boundaries of several political and/or administrative entities (counties and municipalities) even though they conform to a continuous urban system. In many cases this political heterogeneity hinders the implementation of comprehensive environmental management programmes.

Objective

7.15. The objective is to ensure sustainable management of all urban settlements, particularly in developing countries, in order to enhance their ability to improve the living conditions of residents, especially the marginalized and disenfranchised, thereby contributing to the achievement of national economic development goals.

Activities

(a) Improving urban management

7.16. One existing framework for strengthening management is in the United Nations Development Programme/World Bank/United Nations Centre for Human Settlements (Habitat) Urban Management Programme (UMP), a concerted global effort to assist developing countries in addressing urban management issues. Its coverage should be extended to all interested countries during the period 1993-2000. All countries should, as appropriate and in accordance with national plans, objectives and priorities and with the assistance of non-governmental organizations and representatives of local authorities, undertake the following activities at the national, state/provincial and local levels, with the assistance of relevant programmes and support agencies:

a. Adopting and applying urban management guidelines in the areas of land management, urban environmental management, infrastructure management and municipal finance and administration;

b. Accelerating efforts to reduce urban poverty through a number of actions, including:

    i. Generating employment for the urban poor, particularly women, through the provision, improvement and maintenance of urban infrastructure and services and the support of economic activities in the informal sector, such as repairs, recycling, services and small commerce;

    ii. Providing specific assistance to the poorest of the urban poor through, inter alia, the creation of social infrastructure in order to reduce hunger and homelessness, and the provision of adequate community services;

    iii. Encouraging the establishment of indigenous community-based organizations, private voluntary organizations and other forms of non-governmental entities that can contribute to the efforts to reduce poverty and improve the quality of life for low-income families;

c. Adopting innovative city planning strategies to address environmental and social issues by:

    i. Reducing subsidies on, and recovering the full costs of, environmental and other services of high standard (e.g. water supply, sanitation, waste collection, roads, telecommunications) provided to higher income neighbourhoods;

    ii. Improving the level of infrastructure and service provision in poorer urban areas;

d. Developing local strategies for improving the quality of life and the environment, integrating decisions on land use and land management, investing in the public and private sectors and mobilizing human and material resources, thereby promoting employment generation that is environmentally sound and protective of human health.

(b) Strengthening urban data systems

7.17. During the period 1993-2000 all countries should undertake, with the active participation of the business sector as appropriate, pilot projects in selected cities for the collection, analysis and subsequent dissemination of urban data, including environmental impact analysis, at the local, state/provincial, national and international levels and the establishment of city data management capabilities. 5/ United Nations organizations, such as Habitat, UNEP and UNDP, could provide technical advice and model data management systems.

(c) Encouraging intermediate city development

7.18. In order to relieve pressure on large urban agglomerations of developing countries, policies and strategies should be implemented towards the development of intermediate cities that create employment opportunities for unemployed labour in the rural areas and support rural-based economic activities, although sound urban management is essential to ensure that urban sprawl does not expand resource degradation over an ever wider land area and increase pressures to convert open space and agricultural/buffer lands for development.

7.19. Therefore all countries should, as appropriate, conduct reviews of urbanization processes and policies in order to assess the environmental impacts of growth and apply urban planning and management approaches specifically suited to the needs, resource capabilities and characteristics of their growing intermediate-sized cities. As appropriate, they should also concentrate on activities aimed at facilitating the transition from rural to urban lifestyles and settlement patterns and at promoting the development of small-scale economic activities, particularly the production of food, to support local income generation and the production of intermediate goods and services for rural hinterlands.

7.20. All cities, particularly those characterized by severe sustainable development problems, should, in accordance with national laws, rules and regulations, develop and strengthen programmes aimed at addressing such problems and guiding their development along a sustainable path. Some international initiatives in support of such efforts, as in the Sustainable Cities Programme of Habitat and the Healthy Cities Programme of WHO, should be intensified. Additional initiatives involving the World Bank, the regional development banks and bilateral agencies, as well as other interested stakeholders, particularly international and national representatives of local authorities, should be strengthened and coordinated. Individual cities should, as appropriate:

a. Institutionalize a participatory approach to sustainable urban development, based on a continuous dialogue between the actors involved in urban development (the public sector, private sector and communities), especially women and indigenous people;

b. Improve the urban environment by promoting social organization and environmental awareness through the participation of local communities in the identification of public services needs, the provision of urban infrastructure, the enhancement of public amenities and the protection and/or rehabilitation of older buildings, historic precincts and other cultural artifacts. In addition, "green works" programmes should be activated to create self-sustaining human development activities and both formal and informal employment opportunities for low-income urban residents;

c. Strengthen the capacities of their local governing bodies to deal more effectively with the broad range of developmental and environmental challenges associated with rapid and sound urban growth through comprehensive approaches to planning that recognize the individual needs of cities and are based on ecologically sound urban design practices;

d. Participate in international "sustainable city networks" to exchange experiences and mobilize national and international technical and financial support;

e. Promote the formulation of environmentally sound and culturally sensitive tourism programmes as a strategy for sustainable development of urban and rural settlements and as a way of decentralizing urban development and reducing discrepancies among regions;

f. Establish mechanisms, with the assistance of relevant international agencies, to mobilize resources for local initiatives to improve environmental quality;

g. Empower community groups, non-governmental organizations and individuals to assume the authority and responsibility for managing and enhancing their immediate environment through participatory tools, techniques and approaches embodied in the concept of environmental care.

7.21. Cities of all countries should reinforce cooperation among themselves and cities of the developed countries, under the aegis of non-governmental organizations active in this field, such as the International Union of Local Authorities (IULA), the International Council for Local Environmental Initiatives (ICLEI) and the World Federation of Twin Cities.

Means of implementation

(a) Financing and cost evaluation

7.22. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $100 billion, including about $15 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Human resource development and capacity-building

7.23. Developing countries should, with appropriate international assistance, consider focusing on training and developing a cadre of urban managers, technicians, administrators and other relevant stakeholders who can successfully manage environmentally sound urban development and growth and are equipped with the skills necessary to analyse and adapt the innovative experiences of other cities. For this purpose, the full range of training methods - from formal education to the use of the mass media - should be utilized, as well as the "learning by doing" option.

7.24. Developing countries should also encourage technological training and research through joint efforts by donors, non-governmental organizations and private business in such areas as the reduction of waste, water quality, saving of energy, safe production of chemicals and less polluting transportation.

7.25. Capacity-building activities carried out by all countries, assisted as suggested above, should go beyond the training of individuals and functional groups to include institutional arrangements, administrative routines, inter-agency linkages, information flows and consultative processes.

7.26. In addition, international efforts, such as the Urban Management Programme, in cooperation with multilateral and bilateral agencies, should continue to assist the developing countries in their efforts to develop a participatory structure by mobilizing the human resources of the private sector, non-governmental organizations and the poor, particularly women and the disadvantaged.

C. Promoting sustainable land-use planning and management

Basis for action

7.27. Access to land resources is an essential component of sustainable low-impact lifestyles. Land resources are the basis for (human) living systems and provide soil, energy, water and the opportunity for all human activity. In rapidly growing urban areas, access to land is rendered increasingly difficult by the conflicting demands of industry, housing, commerce, agriculture, land tenure structures and the need for open spaces. Furthermore, the rising costs of urban land prevent the poor from gaining access to suitable land. In rural areas, unsustainable practices, such as the exploitation of marginal lands and the encroachment on forests and ecologically fragile areas by commercial interests and landless rural populations, result in environmental degradation, as well as in diminishing returns for impoverished rural settlers.

Objective

7.28. The objective is to provide for the land requirements of human settlement development through environmentally sound physical planning and land use so as to ensure access to land to all households and, where appropriate, the encouragement of communally and collectively owned and managed land. 6/ Particular attention should be paid to the needs of women and indigenous people for economic and cultural reasons.

Activities

7.29. All countries should consider, as appropriate, undertaking a comprehensive national inventory of their land resources in order to establish a land information system in which land resources will be classified according to their most appropriate uses and environmentally fragile or disaster-prone areas will be identified for special protection measures.

7.30. Subsequently, all countries should consider developing national land-resource management plans to guide land-resource development and utilization and, to that end, should:

a. Establish, as appropriate, national legislation to guide the implementation of public policies for environmentally sound urban development, land utilization, housing and for the improved management of urban expansion;

b. Create, where appropriate, efficient and accessible land markets that meet community development needs by, inter alia, improving land registry systems and streamlining procedures in land transactions;

c. Develop fiscal incentives and land-use control measures, including land-use planning solutions for a more rational and environmentally sound use of limited land resources;

d. Encourage partnerships among the public, private and community sectors in managing land resources for human settlements development;

e. Strengthen community-based land-resource protection practices in existing urban and rural settlements;

f. Establish appropriate forms of land tenure that provide security of tenure for all land-users, especially indigenous people, women, local communities, the low-income urban dwellers and the rural poor;

g. Accelerate efforts to promote access to land by the urban and rural poor, including credit schemes for the purchase of land and for building/acquiring or improving safe and healthy shelter and infrastructure services;

h. Develop and support the implementation of improved land-management practices that deal comprehensively with potentially competing land requirements for agriculture, industry, transport, urban development, green spaces, preserves and other vital needs;

i. Promote understanding among policy makers of the adverse consequences of unplanned settlements in environmentally vulnerable areas and of the appropriate national and local land-use and settlements policies required for this purpose.

7.31. At the international level, global coordination of land-resource management activities should be strengthened by the various bilateral and multilateral agencies and programmes, such as UNDP, FAO, the World Bank, the regional development banks, other interested organizations and the UNDP/World Bank/Habitat Urban Management Programme, and action should be taken to promote the transfer of applicable experience on sustainable land-management practices to and among developing countries.

Means of implementation

(a) Financing and cost evaluation

7.32. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $3 billion, including about $300 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

7.33. All countries, particularly developing countries, alone or in regional or subregional groupings, should be given access to modern techniques of land-resource management, such as geographical information systems, satellite photography/imagery and other remote-sensing technologies.

(c) Human resource development and capacity-building

7.34. Environmentally focused training activities in sustainable land-resources planning and management should be undertaken in all countries, with developing countries being given assistance through international support and funding agencies in order to:

a. Strengthen the capacity of national, state/provincial and local educational research and training institutions to provide formal training of land-management technicians and professionals;

b. Facilitate the organizational review of government ministries and agencies responsible for land questions, in order to devise more efficient mechanisms of land-resource management, and carry out periodic in-service refresher courses for the managers and staff of such ministries and agencies in order to familiarize them with up-to-date land-resource-management technologies;

c. Where appropriate, provide such agencies with modern equipment, such as computer hardware and software and survey equipment;

d. Strengthen existing programmes and promote an international and interregional exchange of information and experience in land management through the establishment of professional associations in land-management sciences and related activities, such as workshops and seminars.

D. Promoting the integrated provision of environmental infrastructure: water, sanitation, drainage and solid-waste management

Basis for action

7.35. The sustainability of urban development is defined by many parameters relating to the availability of water supplies, air quality and the provision of environmental infrastructure for sanitation and waste management. As a result of the density of users, urbanization, if properly managed, offers unique opportunities for the supply of sustainable environmental infrastructure through adequate pricing policies, educational programmes and equitable access mechanisms that are economically and environmentally sound. In most developing countries, however, the inadequacy and lack of environmental infrastructure is responsible for widespread ill-health and a large number of preventable deaths each year. In those countries conditions are set to worsen due to growing needs that exceed the capacity of Governments to respond adequately.

7.36. An integrated approach to the provision of environmentally sound infrastructure in human settlements, in particular for the urban and rural poor, is an investment in sustainable development that can improve the quality of life, increase productivity, improve health and reduce the burden of investments in curative medicine and poverty alleviation.

7.37. Most of the activities whose management would be improved by an integrated approach, are covered in Agenda 21 as follows: chapter 6 (Protecting and promoting human health conditions), chapters 9 (Protecting the atmosphere), 18 (Protecting the quality and supply of freshwater resources) and 21 (Environmentally sound management of solid wastes and sewage-related issues).

Objective

7.38. The objective is to ensure the provision of adequate environmental infrastructure facilities in all settlements by the year 2025. The achievement of this objective would require that all developing countries incorporate in their national strategies programmes to build the necessary technical, financial and human resource capacity aimed at ensuring better integration of infrastructure and environmental planning by the year 2000.

Activities

7.39. All countries should assess the environmental suitability of infrastructure in human settlements, develop national goals for sustainable management of waste, and implement environmentally sound technology to ensure that the environment, human health and quality of life are protected. Settlement infrastructure and environmental programmes designed to promote an integrated human settlements approach to the planning, development, maintenance and management of environmental infrastructure (water supply, sanitation, drainage, solid-waste management) should be strengthened with the assistance of bilateral and multilateral agencies. Coordination among these agencies and with collaboration from international and national representatives of local authorities, the private sector and community groups should also be strengthened. The activities of all agencies engaged in providing environmental infrastructure should, where possible, reflect an ecosystem or metropolitan area approach to settlements and should include monitoring, applied research, capacity-building, transfer of appropriate technology and technical cooperation among the range of programme activities.

7.40. Developing countries should be assisted at the national and local levels in adopting an integrated approach to the provision of water supply, energy, sanitation, drainage and solid-waste management, and external funding agencies should ensure that this approach is applied in particular to environmental infrastructure improvement in informal settlements based on regulations and standards that take into account the living conditions and resources of the communities to be served.

7.41. All countries should, as appropriate, adopt the following principles for the provision of environmental infrastructure:

a. Adopt policies that minimize if not altogether avoid environmental damage, whenever possible;

b. Ensure that relevant decisions are preceded by environmental impact assessments and also take into account the costs of any ecological consequences;

c. Promote development in accordance with indigenous practices and adopt technologies appropriate to local conditions;

d. Promote policies aimed at recovering the actual cost of infrastructure services, while at the same time recognizing the need to find suitable approaches (including subsidies) to extend basic services to all households;

e. Seek joint solutions to environmental problems that affect several localities.

7.42. The dissemination of information from existing programmes should be facilitated and encouraged among interested countries and local institutions.

Means of implementation

(a) Financing and cost evaluation

7.43. The Conference secretariat has estimated most of the costs of implementing the activities of this programme in other chapters. The secretariat estimates the average total annual cost (1993-2000) of technical assistance from the international community grant or concessional terms to be about $50 million. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

7.44. Scientific and technological means within the existing programmes should be coordinated wherever possible and should:

a. Accelerate research in the area of integrated policies of environmental infrastructure programmes and projects based on cost/benefit analysis and overall environmental impact;

b. Promote methods of assessing "effective demand", utilizing environment and development data as criteria for selecting technology.

(c) Human resource development and capacity-building

7.45. With the assistance and support of funding agencies, all countries should, as appropriate, undertake training and popular participation programmes aimed at:

a. Raising awareness of the means, approaches and benefits of the provision of environmental infrastructure facilities, especially among indigenous people, women, low-income groups and the poor;

b. Developing a cadre of professionals with adequate skills in integrated infrastructural service planning and maintenance of resource-efficient, environmentally sound and socially acceptable systems;

c. Strengthening the institutional capacity of local authorities and administrators in the integrated provision of adequate infrastructure services in partnership with local communities and the private sector;

d. Adopting appropriate legal and regulatory instruments, including cross-subsidy arrangements, to extend the benefits of adequate and affordable environmental infrastructure to unserved population groups, especially the poor.

E. Promoting sustainable energy and transport systems in human settlements

Basis for action

7.46. Most of the commercial and non-commercial energy produced today is used in and for human settlements, and a substantial percentage of it is used by the household sector. Developing countries are at present faced with the need to increase their energy production to accelerate development and raise the living standards of their populations, while at the same time reducing energy production costs and energy-related pollution. Increasing the efficiency of energy use to reduce its polluting effects and to promote the use of renewable energies must be a priority in any action taken to protect the urban environment.

7.47. Developed countries, as the largest consumers of energy, are faced with the need for energy planning and management, promoting renewable and alternate sources of energy, and evaluating the life-cycle costs of current systems and practices as a result of which many metropolitan areas are suffering from pervasive air quality problems related to ozone, particulate matters and carbon monoxide. The causes have much to do with technological inadequacies and with an increasing fuel consumption generated by inefficiencies, high demographic and industrial concentrations and a rapid expansion in the number of motor vehicles.

7.48. Transport accounts for about 30 per cent of commercial energy consumption and for about 60 per cent of total global consumption of liquid petroleum. In developing countries, rapid motorization and insufficient investments in urban-transport planning, traffic management and infrastructure, are creating increasing problems in terms of accidents and injury, health, noise, congestion and loss of productivity similar to those occurring in many developed countries. All of these problems have a severe impact on urban populations, particularly the low-income and no-income groups.

Objectives

7.49. The objectives are to extend the provision of more energy-efficient technology and alternative/renewable energy for human settlements and to reduce negative impacts of energy production and use on human health and on the environment.

Activities

7.50. The principal activities relevant to this programme area are included in chapter 9 (Protection of the atmosphere), programme area B, subprogramme 1 (Energy development, efficiency and consumption) and subprogramme 2 (Transportation).

7.51. A comprehensive approach to human settlements development should include the promotion of sustainable energy development in all countries, as follows:

a. Developing countries, in particular, should:

   i. Formulate national action programmes to promote and support reafforestation and national forest regeneration with a view to achieving sustained provision of the biomass energy needs of the low-income groups in urban areas and the rural poor, in particular women and children;

   ii. Formulate national action programmes to promote integrated development of energy-saving and renewable energy technologies, particularly for the use of solar, hydro, wind and biomass sources;

   iii. Promote wide dissemination and commercialization of renewable energy technologies through suitable measures, inter alia, fiscal and technology transfer mechanisms;

iv. Carry out information and training programmes directed at manufacturers and users in order to promote energy-saving techniques and energy-efficient appliances;

b. International organizations and bilateral donors should:

i. Support developing countries in implementing national energy programmes in order to achieve widespread use of energy-saving and renewable energy technologies, particularly the use of solar, wind, biomass and hydro sources;

ii. Provide access to research and development results to increase energy-use efficiency levels in human settlements.

7.52. Promoting efficient and environmentally sound urban transport systems in all countries should be a comprehensive approach to urban-transport planning and management. To this end, all countries should:

a. Integrate land-use and transportation planning to encourage development patterns that reduce transport demand;

b. Adopt urban-transport programmes favouring high-occupancy public transport in countries, as appropriate;

c. Encourage non-motorized modes of transport by providing safe cycleways and footways in urban and suburban centres in countries, as appropriate;

d. Devote particular attention to effective traffic management, efficient operation of public transport and maintenance of transport infrastructure;

e. Promote the exchange of information among countries and representatives of local and metropolitan areas;

f. Re-evaluate the present consumption and production patterns in order to reduce the use of energy and national resources.

Means of implementation

(a) Financing and cost evaluation

7.53. The Conference secretariat has estimated the costs of implementing the activities of this programme in chapter 9 (Protection of the atmosphere).

(b) Human resource development and capacity-building

7.54. In order to enhance the skills of energy service and transport professionals and institutions, all countries should, as appropriate:

a. Provide on-the-job and other training of government officials, planners, traffic engineers and managers involved in the energy-service and transport section;

b. Raise public awareness of the environmental impacts of transport and travel behaviour through mass media campaigns and support for non-governmental and community initiatives promoting the use of non-motorized transport, shared driving and improved traffic safety measures;

c. Strengthen regional, national, state/provincial, and private sector institutions that provide education and training on energy service and urban transport planning and management.

F. Promoting human settlement planning and management in disaster-prone areas

Basis for action

7.55. Natural disasters cause loss of life, disruption of economic activities and urban productivity, particularly for highly susceptible low-income groups, and environmental damage, such as loss of fertile agricultural land and contamination of water resources, and can lead to major resettlement of populations. Over the past two decades, they are estimated to have caused some 3 million deaths and affected 800 million people. Global economic losses have been estimated by the Office of the United Nations Disaster Relief Coordinator to be in the range of $30-50 billion per year.

7.56. The General Assembly, in resolution 44/236, proclaimed the 1990s as the International Decade for Natural Disaster Reduction. The goals of the Decade 7/ bear relevance to the objectives of the present programme area.

7.57. In addition, there is an urgent need to address the prevention and reduction of man-made disasters and/or disasters caused by, inter alia, industries, unsafe nuclear power generation and toxic wastes (see chapter 6 of Agenda 21).

Objective

7.58. The objective is to enable all countries, in particular those that are disaster-prone, to mitigate the negative impact of natural and man-made disasters on human settlements, national economies and the environment.

Activities

7.59. Three distinct areas of activity are foreseen under this programme area, namely, the development of a "culture of safety", pre-disaster planning and post-disaster reconstruction.

(a) Developing a culture of safety

7.60. To promote a "culture of safety" in all countries, especially those that are disaster-prone, the following activities should be carried out:

a. Completing national and local studies on the nature and occurrence of natural disasters, their impact on people and economic activities, the effects of inadequate construction and land use in hazard-prone areas, and the social and economic advantages of adequate pre-disaster planning;

b. Implementing nationwide and local awareness campaigns through all available media, translating the above knowledge into information easily comprehensible to the general public and to the populations directly exposed to hazards;

c. Strengthening, and/or developing global, regional, national and local early warning systems to alert populations to impending disasters;

d. Identifying industrially based environmental disaster areas at the national and international levels and implementing strategies aimed at the rehabilitation of these areas through, inter alia:

    i. Restructuring of the economic activities and promoting new job opportunities in environmentally sound sectors;

    ii. Promoting close collaboration between governmental and local authorities, local communities and non-governmental organizations and private business;

    iii. Developing and enforcing strict environmental control standards.

(b) Developing pre-disaster planning

7.61. Pre-disaster planning should form an integral part of human settlement planning in all countries. The following should be included:

a. Undertaking complete multi-hazard research into risk and vulnerability of human settlements and settlement infrastructure, including water and sewerage, communication and transportation networks, as one type of risk reduction may increase vulnerability to another (e.g., an earthquake-resistant house made of wood will be more vulnerable to wind storms);

b. Developing methodologies for determining risk and vulnerability within specific human settlements and incorporating risk and vulnerability reduction into the human settlement planning and management process;

c. Redirecting inappropriate new development and human settlements to areas not prone to hazards;

d. Preparing guidelines on location, design and operation of potentially hazardous industries and activities;

e. Developing tools (legal, economic etc.) to encourage disaster-sensitive development, including means of ensuring that limitations on development options are not punitive to owners, or incorporate alternative means of compensation;

f. Further developing and disseminating information on disaster-resistant building materials and construction technologies for buildings and public works in general;

g. Developing training programmes for contractors and builders on disaster-resistant construction methods. Some programmes should be directed particularly to small enterprises, which build the great majority of housing and other small buildings in the developing countries, as well as to the rural populations, which build their own houses;

h. Developing training programmes for emergency site managers, non-governmental organizations and community groups which cover all aspects of disaster mitigation, including urban search and rescue, emergency communications, early warning techniques, and pre-disaster planning;

i. Developing procedures and practices to enable local communities to receive information about hazardous installations or situations in these areas, and facilitate their participation in early warning and disaster abatement and response procedures and plans;

j. Preparing action plans for the reconstruction of settlements, especially the reconstruction of community life-lines.

(c) Initiating post-disaster reconstruction and rehabilitation planning

7.62. The international community, as a major partner in post-reconstruction and rehabilitation, should ensure that the countries involved derive the greatest benefits from the funds allocated by undertaking the following activities:

a. Carrying out research on past experiences on the social and economic aspects of post-disaster reconstruction and adopting effective strategies and guidelines for post-disaster reconstruction, with particular focus on development-focused strategies in the allocation of scarce reconstruction resources, and on the opportunities that post-disaster reconstruction provides to introduce sustainable settlement patterns;

b. Preparing and disseminating international guidelines for adaptation to national and local needs;

c. Supporting efforts of national Governments to initiate contingency planning, with participation of affected communities, for post-disaster reconstruction and rehabilitation.

Means of implementation

(a) Financing and cost evaluation

7.63. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $50 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

7.64. Scientists and engineers specializing in this field in both developing and developed countries should collaborate with urban and regional planners in order to provide the basic knowledge and means to mitigate losses owing to disasters as well as environmentally inappropriate development.

(c) Human resource development and capacity-building

7.65. Developing countries should conduct training programmes on disaster-resistant construction methods for contractors and builders, who build the majority of housing in the developing countries. This should focus on the small business enterprises, which build the majority of housing in the developing countries.

7.66. Training programmes should be extended to government officials and planners and community and non-governmental organizations to cover all aspects of disaster mitigation, such as early warning techniques, pre-disaster planning and construction, post-disaster construction and rehabilitation.

G. Promoting sustainable construction industry activities

Basis for action

7.67. The activities of the construction sector are vital to the achievement of the national socio-economic development goals of providing shelter, infrastructure and employment. However, they can be a major source of environmental damage through depletion of the natural resource base, degradation of fragile eco-zones, chemical pollution and the use of building materials harmful to human health.

Objectives

7.68. The objectives are, first, to adopt policies and technologies and to exchange information on them in order to enable the construction sector to meet human settlement development goals, while avoiding harmful side-effects on human health and on the biosphere, and, second, to enhance the employment-generation capacity of the construction sector. Governments should work in close collaboration with the private sector in achieving these objectives.

Activities

7.69. All countries should, as appropriate and in accordance with national plans, objectives and priorities:

a. Establish and strengthen indigenous building materials industry, based, as much as possible, on inputs of locally available natural resources;

b. Formulate programmes to enhance the utilization of local materials by the construction sector by expanding technical support and incentive schemes for increasing the capabilities and economic viability of small-scale and informal operatives which make use of these materials and traditional construction techniques;

c. Adopt standards and other regulatory measures which promote the increased use of energy-efficient designs and technologies and sustainable utilization of natural resources in an economically and environmentally appropriate way;

d. Formulate appropriate land-use policies and introduce planning regulations specially aimed at the protection of eco-sensitive zones against physical disruption by construction and construction-related activities;

e. Promote the use of labour-intensive construction and maintenance technologies which generate employment in the construction sector for the underemployed labour force found in most large cities, while at the same time promoting the development of skills in the construction sector;

f. Develop policies and practices to reach the informal sector and self-help housing builders by adopting measures to increase the affordability of building materials on the part of the urban and rural poor, through, inter alia, credit schemes and bulk procurement of building materials for sale to small-scale builders and communities.

7.70. All countries should:

a. Promote the free exchange of information on the entire range of environmental and health aspects of construction, including the development and dissemination of databases on the adverse environmental effects of building materials through the collaborative efforts of the private and public sectors;

b. Promote the development and dissemination of databases on the adverse environmental and health effects of building materials and introduce legislation and financial incentives to promote recycling of energy-intensive materials in the construction industry and conservation of waste energy in building-materials production methods;

c. Promote the use of economic instruments, such as product charges, to discourage the use of construction materials and products that create pollution during their life cycle;

d. Promote information exchange and appropriate technology transfer among all countries, with particular attention to developing countries, for resource management in construction, particularly for non-renewable resources;

e. Promote research in construction industries and related activities, and establish and strengthen institutions in this sector.

Means of implementation

(a) Financing and cost evaluation

7.71. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $40 billion, including about $4 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Human resource development and capacity-building

7.72. Developing countries should be assisted by international support and funding agencies in upgrading the technical and managerial capacities of the small entrepreneur and the vocational skills of operatives and supervisors in the building materials industry, using a variety of training methods. These countries should also be assisted in developing programmes to encourage the use of non-waste and clean technologies through appropriate transfer of technology.

7.73. General education programmes should be developed in all countries, as appropriate, to increase builder awareness of available sustainable technologies.

7.74. Local authorities are called upon to play a pioneering role in promoting the increased use of environmentally sound building materials and construction technologies, e.g., by pursuing an innovative procurement policy.

H. Promoting human resource development and capacity-building for human settlements development

Basis for action

7.75. Most countries, in addition to shortcomings in the availability of specialized expertise in the areas of housing, settlement management, land management, infrastructure, construction, energy, transport, and pre-disaster planning and reconstruction, face three cross-sectoral human resource development and capacity-building shortfalls. First is the absence of an enabling policy environment capable of integrating the resources and activities of the public sector, the private sector and the community, or social sector; second is the weakness of specialized training and research institutions; and third is the insufficient capacity for technical training and assistance for low-income communities, both urban and rural.

Objective

7.76. The objective is to improve human resource development and capacity-building in all countries by enhancing the personal and institutional capacity of all actors, particularly indigenous people and women, involved in human settlement development. In this regard, account should be taken of traditional cultural practices of indigenous people and their relationship to the environment.

Activities

7.77. Specific human resource development and capacity-building activities have been built into each of the programme areas of this chapter. More generally, however, additional steps should be taken to reinforce those activities. In order to do so, all countries, as appropriate, should take the following action:

a. Strengthening the development of human resources and of capacities of public sector institutions through technical assistance and international cooperation so as to achieve by the year 2000 substantial improvement in the efficiency of governmental activities;

b. Creating an enabling policy environment supportive of the partnership between the public, private and community sectors;

c. Providing enhanced training and technical assistance to institutions providing training for technicians, professionals and administrators, and appointed, elected and professional members of local governments and strengthening their capacity to address priority training needs, particularly in regard to social, economic and environmental aspects of human settlements development;

d. Providing direct assistance for human settlement development at the community level, inter alia, by:

    i. Strengthening and promoting programmes for social mobilization and raising awareness of the potential of women and youth in human settlements activities;

    ii. Facilitating coordination of the activities of women, youth, community groups and non-governmental organizations in human settlements development;

    iii. Promoting research on women's programmes and other groups, and evaluating progress made with a view to identifying bottlenecks and needed assistance;

e. Promoting the inclusion of integrated environmental management into general local government activities.

7.78. Both international organizations and non-governmental organizations should support the above activities by, inter alia, strengthening subregional training institutions, providing updated training materials and disseminating the results of successful human resource and capacity-building activities, programmes and projects.

Means of implementation

(a) Financing and cost evaluation

7.79. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $65 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

7.80. Both formal training and non-formal types of human resource development and capacity-building programmes should be combined, and use should be made of user-oriented training methods, up-to-date training materials and modern audio-visual communication systems.

Notes

1/ No aggregate figures are available on internal expenditure or official development assistance on human settlements. However, data available in the World Development Report, 1991, for 16 low-income developing countries show that the percentage of central government expenditure on housing, amenities and social security and welfare for 1989 averaged 5.6 per cent, with a high of 15.1 per cent in the case of

Sri Lanka, which has embarked on a vigorous housing programme. In OECD industrialized countries, during the same year, the percentage of central government expenditure on housing, amenities and social security and welfare ranged from a minimum of 29.3 per cent to a maximum of 49.4 per cent, with an average of 39 per cent (World Bank, World Development Report, 1991, World Development Indicators, table 11 (Washington, D.C., 1991)).

2/ See the report of the Director-General for Development and International Economic Cooperation containing preliminary statistical data on operational activities of the United Nations system for 1988 (A/44/324-E/1989/106/Add.4, annex).

3/ World Bank, Annual Report, 1991 (Washington, D.C., 1991).

4/ UNDP, "Reported investment commitments related to UNDP-assisted projects, 1988", table 1, "Sectoral distribution of investment commitment in 1988-1989".

5/ A pilot programme of this type, the City Data Programme (CDP), is already in operation in the United Nations Centre on Human Settlements (Habitat) aimed at the production and dissemination to participating cities of microcomputer application software designed to store, process and retrieve city data for local, national and international exchange and dissemination.

6/ This calls for integrated land-resource management policies, which are also addressed in chapter 10 of Agenda 21 (Integrated approach to planning and management of land resources).

7/ The goals of the International Decade for Natural Disaster Reduction, set out in the annex to General Assembly resolution 44/236, are as follows:

a. To improve the capacity of each country to mitigate the effects of natural disasters expeditiously and effectively, paying special attention to assisting developing countries in the assessment of disaster damage potential and in the establishment of early warning systems and disaster-resistant structures when and where needed;

b. To devise appropriate guidelines and strategies for applying existing scientific and technical knowledge, taking into account the cultural and economic diversity among nations;

c. To foster scientific and engineering endeavours aimed at closing critical gaps in knowledge in order to reduce loss of life and property;

d. To disseminate existing and new technical information related to measures for the assessment, prediction and mitigation of natural disasters;

e. To develop measures for the assessment, prediction, prevention and mitigation of natural disasters through programmes of technical assistance and technology transfer, demonstration projects, and education and training, tailored to specific disasters and locations, and to evaluate the effectiveness of those programmes.

Agenda 21 – Chapter 8
INTEGRATING ENVIRONMENT AND DEVELOPMENT IN DECISION-MAKING

8.1. This chapter contains the following programme areas:

- a. Integrating environment and development at the policy, planning and management levels;
- b. Providing an effective legal and regulatory framework;
- c. Making effective use of economic instruments and market and other incentives;
- d. Establishing systems for integrated environmental and economic accounting.

PROGRAMME AREAS

A. Integrating environment and development at the policy, planning and management levels

Basis for action

8.2. Prevailing systems for decision-making in many countries tend to separate economic, social and environmental factors at the policy, planning and management levels. This influences the actions of all groups in society, including Governments, industry and individuals, and has important implications for the efficiency and sustainability of development. An adjustment or even a fundamental reshaping of decision-making, in the light of country-specific conditions, may be necessary if environment and development is to be put at the centre of economic and political decision-making, in effect achieving a full integration of these factors. In recent years, some Governments have also begun to make significant changes in the institutional structures of government in order to enable more systematic consideration of the environment when decisions are made on economic, social, fiscal, energy, agricultural, transportation, trade and other policies, as well as the implications of policies in these areas for the environment. New forms of dialogue are also being developed for achieving better integration among national and local government, industry, science, environmental groups and the public in the process of developing effective approaches to environment and development. The responsibility for bringing about changes lies with Governments in partnership with the private sector and local authorities, and in collaboration with national, regional and international organizations, including in particular UNEP, UNDP and the World Bank. Exchange of experience between countries can also be significant. National plans, goals and objectives, national rules, regulations and law, and the specific situation in which different countries are placed are the overall framework in which such integration takes place. In this context, it must be borne in mind that environmental standards may pose severe economic and social costs if they are uniformly applied in developing countries.

Objectives

8.3. The overall objective is to improve or restructure the decision-making process so that consideration of socio-economic and environmental issues is fully integrated and a broader range of public participation assured. Recognizing that countries will develop their own priorities in accordance with their prevailing conditions, needs, national plans, policies and programmes, the following objectives are proposed:

- a. To conduct a national review of economic, sectoral and environmental policies, strategies and plans to ensure the progressive integration of environmental and developmental issues;
- b. To strengthen institutional structures to allow the full integration of environmental and developmental issues, at all levels of decision-making;
- c. To develop or improve mechanisms to facilitate the involvement of concerned individuals, groups and organizations in decision-making at all levels;

d. To establish domestically determined procedures to integrate environment and development issues in decision-making.

Activities

(a) Improving decision-making processes

8.4. The primary need is to integrate environmental and developmental decision-making processes. To do this, Governments should conduct a national review and, where appropriate, improve the processes of decision-making so as to achieve the progressive integration of economic, social and environmental issues in the pursuit of development that is economically efficient, socially equitable and responsible and environmentally sound. Countries will develop their own priorities in accordance with their national plans, policies and programmes for the following activities:

a. Ensuring the integration of economic, social and environmental considerations in decision-making at all levels and in all ministries;

b. Adopting a domestically formulated policy framework that reflects a long-term perspective and cross-sectoral approach as the basis for decisions, taking account of the linkages between and within the various political, economic, social and environmental issues involved in the development process;

c. Establishing domestically determined ways and means to ensure the coherence of sectoral, economic, social and environmental policies, plans and policy instruments, including fiscal measures and the budget; these mechanisms should apply at various levels and bring together those interested in the development process;

d. Monitoring and evaluating the development process systematically, conducting regular reviews of the state of human resources development, economic and social conditions and trends, the state of the environment and natural resources; this could be complemented by annual environment and development reviews, with a view to assessing sustainable development achievements by the various sectors and departments of government;

e. Ensuring transparency of, and accountability for, the environmental implications of economic and sectoral policies;

f. Ensuring access by the public to relevant information, facilitating the reception of public views and allowing for effective participation.

(b) Improving planning and management systems

8.5. To support a more integrated approach to decision-making, the data systems and analytical methods used to support such decision-making processes may need to be improved. Governments, in collaboration, where appropriate, with national and international organizations, should review the status of the planning and management system and, where necessary, modify and strengthen procedures so as to facilitate the integrated consideration of social, economic and environmental issues. Countries will develop their own priorities in accordance with their national plans, policies and programmes for the following activities:

a. Improving the use of data and information at all stages of planning and management, making systematic and simultaneous use of social, economic, developmental, ecological and environmental data; analysis should stress interactions and synergisms; a broad range of analytical methods should be encouraged so as to provide various points of view;

b. Adopting comprehensive analytical procedures for prior and simultaneous assessment of the impacts of decisions, including the impacts within and among the economic, social and environmental spheres; these procedures should extend beyond the project level to policies and programmes; analysis should also include assessment of costs, benefits and risks;

c. Adopting flexible and integrative planning approaches that allow the consideration of multiple goals and enable adjustment of changing needs; integrative area approaches at the ecosystem or watershed level can assist in this approach;

d. Adopting integrated management systems, particularly for the management of natural resources; traditional or indigenous methods should be studied and considered wherever they have proved effective; women's traditional roles should not be marginalized as a result of the introduction of new management systems;

e. Adopting integrated approaches to sustainable development at the regional level, including transboundary areas, subject to the requirements of particular circumstances and needs;

f. Using policy instruments (legal/regulatory and economic) as a tool for planning and management, seeking incorporation of efficiency criteria in decisions; instruments should be regularly reviewed and adapted to ensure that they continue to be effective;

g. Delegating planning and management responsibilities to the lowest level of public authority consistent with effective action; in particular the advantages of effective and equitable opportunities for participation by women should be discussed;

h. Establishing procedures for involving local communities in contingency planning for environmental and industrial accidents, and maintaining an open exchange of information on local hazards.

(c) Data and information

8.6. Countries could develop systems for monitoring and evaluation of progress towards achieving sustainable development by adopting indicators that measure changes across economic, social and environmental dimensions.

(d) Adopting a national strategy for sustainable development

8.7. Governments, in cooperation, where appropriate, with international organizations, should adopt a national strategy for sustainable development based on, inter alia, the implementation of decisions taken at the Conference, particularly in respect of Agenda 21. This strategy should build upon and harmonize the various sectoral economic, social and environmental policies and plans that are operating in the country. The experience gained through existing planning exercises such as national reports for the Conference, national conservation strategies and environment action plans should be fully used and incorporated into a country-driven sustainable development strategy. Its goals should be to ensure socially responsible economic development while protecting the resource base and the environment for the benefit of future generations. It should be developed through the widest possible participation. It should be based on a thorough assessment of the current situation and initiatives.

Means of implementation

(a) Financing and cost evaluation

8.8. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $50 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Researching environment and development interactions

8.9. Governments, in collaboration with the national and international scientific community and in cooperation with international organizations, as appropriate, should intensify efforts to clarify the interactions between and within social, economic and environmental considerations. Research should be undertaken with the explicit objective of assisting policy decisions and providing recommendations on improving management practices.

(c) Enhancing education and training

8.10. Countries, in cooperation, where appropriate, with national, regional or international organizations, should ensure that essential human resources exist, or be developed, to undertake the integration of environment and development at various stages of the decision-making and implementation process. To do this, they should improve education and technical training, particularly for women and girls, by including interdisciplinary approaches, as appropriate, in technical, vocational, university and other curricula. They should also undertake systematic training of government personnel, planners and managers on a regular basis, giving priority to the requisite integrative approaches and planning and management techniques that are suited to country-specific conditions.

(d) Promoting public awareness

8.11. Countries, in cooperation with national institutions and groups, the media and the international community, should promote awareness in the public at large, as well as in specialized circles, of the importance of considering environment and development in an integrated manner, and should establish mechanisms for facilitating a direct exchange of information and views with the public. Priority should be given to highlighting the responsibilities and potential contributions of different social groups.

(e) Strengthen national institutional capacity

8.12. Governments, in cooperation, where appropriate, with international organizations, should strengthen national institutional capability and capacity to integrate social, economic, developmental and environmental issues at all levels of development decision-making and implementation. Attention should be given to moving away from narrow sectoral approaches, progressing towards full cross-sectoral coordination and cooperation.

B. Providing an effective legal and regulatory framework

Basis for action

8.13. Laws and regulations suited to country-specific conditions are among the most important instruments for transforming environment and development policies into action, not only through "command and control" methods, but also as a normative framework for economic planning and market instruments. Yet, although the volume of legal texts in this field is steadily increasing, much of the law-making in many countries seems to be ad hoc and piecemeal, or has not been endowed with the necessary institutional machinery and authority for enforcement and timely adjustment.

8.14. While there is continuous need for law improvement in all countries, many developing countries have been affected by shortcomings of laws and regulations. To effectively integrate environment and development in the policies and practices of each country, it is essential to develop and implement integrated, enforceable and effective laws and regulations that are based upon sound social, ecological, economic and scientific principles. It is equally critical to develop workable programmes to review and enforce compliance with the laws, regulations and standards that are adopted. Technical support may be needed for many countries to accomplish these goals. Technical cooperation requirements in this field include legal information, advisory services and specialized training and institutional capacity-building.

8.15. The enactment and enforcement of laws and regulations (at the regional, national, state/provincial or local/municipal level) are also essential for the implementation of most international agreements in the field of environment and development, as illustrated by the frequent treaty obligation to report on legislative measures. The survey of existing agreements undertaken in the context of conference preparations has indicated problems of compliance in this respect, and the need for improved national implementation and, where appropriate, related technical assistance. In developing their national priorities, countries should take account of their international obligations.

Objectives

8.16. The overall objective is to promote, in the light of country-specific conditions, the integration of environment and development policies through appropriate legal and regulatory policies, instruments and enforcement mechanisms at the national, state, provincial and local level. Recognizing that countries will develop their own priorities in accordance with their needs and national and, where appropriate, regional plans, policies and programmes, the following objectives are proposed:

a. To disseminate information on effective legal and regulatory innovations in the field of environment and development, including appropriate instruments and compliance incentives, with a view to encouraging their wider use and adoption at the national, state, provincial and local level;

b. To support countries that request it in their national efforts to modernize and strengthen the policy and legal framework of governance for sustainable development, having due regard for local social values and infrastructures;

c. To encourage the development and implementation of national, state, provincial and local programmes that assess and promote compliance and respond appropriately to non-compliance.

Activities

(a) Making laws and regulations more effective

8.17. Governments, with the support, where appropriate, of competent international organizations, should regularly assess the laws and regulations enacted and the related institutional/administrative machinery established at the national/state and local/municipal level in the field of environment and sustainable development, with a view to rendering them effective in practice. Programmes for this purpose could include the promotion of public awareness, preparation and distribution of guidance material, and specialized training, including workshops, seminars, education programmes and conferences, for public officials who design, implement, monitor and enforce laws and regulations.

(b) Establishing judicial and administrative procedures

8.18. Governments and legislators, with the support, where appropriate, of competent international organizations, should establish judicial and administrative procedures for legal redress and remedy of actions affecting environment and development that may be unlawful or infringe on rights under the law, and should provide access to individuals, groups and organizations with a recognized legal interest.

(c) Providing legal reference and support services

8.19. Competent intergovernmental and non-governmental organizations could cooperate to provide Governments and legislators, upon request, with an integrated programme of environment and development law (sustainable development law) services, carefully adapted to the specific requirements of the recipient legal and administrative systems. Such systems could usefully include assistance in the preparation of comprehensive inventories and reviews of national legal systems. Past experience has demonstrated the usefulness of combining specialized legal information services with legal expert advice. Within the United Nations system, closer cooperation among all agencies concerned would avoid duplication of databases and facilitate division of labour. These agencies could examine the possibility and merit of performing reviews of selected national legal systems.

(d) Establishing a cooperative training network for sustainable development law

8.20. Competent international and academic institutions could, within agreed frameworks, cooperate to provide, especially for trainees from developing countries, postgraduate programmes and in-service training facilities in environment and development law. Such training should address both the effective application and the progressive improvement of applicable laws, the related skills of negotiating, drafting and mediation, and the training of trainers. Intergovernmental and non-governmental organizations already active in this field could cooperate with related university programmes to harmonize curriculum planning and to offer an optimal range of options to interested Governments and potential sponsors.

(e) Developing effective national programmes for reviewing and enforcing compliance with national, state, provincial and local laws on environment and development

8.21. Each country should develop integrated strategies to maximize compliance with its laws and regulations relating to sustainable development, with assistance from international organizations and other countries as appropriate. The strategies could include:

a. Enforceable, effective laws, regulations and standards that are based on sound economic, social and environmental principles and appropriate risk assessment, incorporating sanctions designed to punish violations, obtain redress and deter future violations;

b. Mechanisms for promoting compliance;

c. Institutional capacity for collecting compliance data, regularly reviewing compliance, detecting violations, establishing enforcement priorities, undertaking effective enforcement, and conducting periodic evaluations of the effectiveness of compliance and enforcement programmes;

d. Mechanisms for appropriate involvement of individuals and groups in the development and enforcement of laws and regulations on environment and development.

e. National monitoring of legal follow-up to international instruments

8.22. Contracting parties to international agreements, in consultation with the appropriate secretariats of relevant international conventions as appropriate, should improve practices and procedures for collecting information on legal and regulatory measures taken. Contracting parties to international agreements could undertake sample surveys of domestic follow-up action subject to agreement by the sovereign States concerned.

Means of implementation

(a) Financing and cost evaluation

8.23. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $6 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

8.24. The programme relies essentially on a continuation of ongoing work for legal data collection, translation and assessment. Closer cooperation between existing databases may be expected to lead to better division of labour (e.g., in geographical coverage of national legislative gazettes and other reference sources) and to improved standardization and compatibility of data, as appropriate.

(c) Human resource development

8.25. Participation in training is expected to benefit practitioners from developing countries and to enhance training opportunities for women. Demand for this type of postgraduate and in-service training is known to be high. The seminars, workshops and conferences on review and enforcement that have been held to date have been very successful and well attended. The purpose of these efforts is to develop resources (both human and institutional) to design and implement effective programmes to continuously review and enforce national and local laws, regulations and standards on sustainable development.

(d) Strengthening legal and institutional capacity

8.26. A major part of the programme should be oriented towards improving the legal-institutional capacities of countries to cope with national problems of governance and effective law-making and law-applying in the field of environment and sustainable development. Regional centres of excellence could be designated and supported to build up specialized databases and training facilities for linguistic/cultural groups of legal systems.

C. Making effective use of economic instruments and market and other incentives

Basis for action

8.27. Environmental law and regulation are important but cannot alone be expected to deal with the problems of environment and development. Prices, markets and governmental fiscal and economic policies also play a complementary role in shaping attitudes and behaviour towards the environment.

8.28. During the past several years, many Governments, primarily in industrialized countries but also in Central and Eastern Europe and in developing countries, have been making increasing use of economic approaches, including those that are market-oriented. Examples include the polluter-pays principle and the more recent natural-resource-user-pays concept.

8.29. Within a supportive international and national economic context and given the necessary legal and regulatory framework, economic and market-oriented approaches can in many cases enhance capacity to deal with the issues of environment and development. This would be achieved by providing cost-effective solutions, applying integrated pollution prevention control, promoting technological innovation and influencing environmental behaviour, as well as providing financial resources to meet sustainable development objectives.

8.30. What is needed is an appropriate effort to explore and make more effective and widespread use of economic and market-oriented approaches within a broad framework of development policies, law and regulation suited to country-specific conditions as part of a general transition to economic and environmental policies that are supportive and mutually reinforcing.

Objectives

8.31. Recognizing that countries will develop their own priorities in accordance with their needs and national plans, policies and programmes, the challenge is to achieve significant progress in the years ahead in meeting three fundamental objectives:

a. To incorporate environmental costs in the decisions of producers and consumers, to reverse the tendency to treat the environment as a "free good" and to pass these costs on to other parts of society, other countries, or to future generations;

b. To move more fully towards integration of social and environmental costs into economic activities, so that prices will appropriately reflect the relative scarcity and total value of resources and contribute towards the prevention of environmental degradation;

c. To include, wherever appropriate, the use of market principles in the framing of economic instruments and policies to pursue sustainable development.

Activities

(a) Improving or reorienting governmental policies

8.32. In the near term, Governments should consider gradually building on experience with economic instruments and market mechanisms by undertaking to reorient their policies, keeping in mind national plans, priorities and objectives, in order to:

a. Establish effective combinations of economic, regulatory and voluntary (self-regulatory) approaches;

b. Remove or reduce those subsidies that do not conform with sustainable development objectives;

c. Reform or recast existing structures of economic and fiscal incentives to meet environment and development objectives;

d. Establish a policy framework that encourages the creation of new markets in pollution control and environmentally sounder resource management;

e. Move towards pricing consistent with sustainable development objectives.

8.33. In particular, Governments should explore, in cooperation with business and industry, as appropriate, how effective use can be made of economic instruments and market mechanisms in the following areas:

a. Issues related to energy, transportation, agriculture and forestry, water, wastes, health, tourism and tertiary services;

b. Global and transboundary issues;

c. The development and introduction of environmentally sound technology and its adaptation, diffusion and transfer to developing countries in conformity with chapter 34.

(b) Taking account of the particular circumstances of developing countries and countries with economies in transition

8.34. A special effort should be made to develop applications of the use of economic instruments and market mechanisms geared to the particular needs of developing countries and countries with economies in transition, with the assistance of regional and international economic and environmental organizations and, as appropriate, non-governmental research institutes, by:

a. Providing technical support to those countries on issues relating to the application of economic instruments and market mechanisms;

b. Encouraging regional seminars and, possibly, the development of regional centres of expertise.

(c) Creating an inventory of effective uses of economic instruments and market mechanisms

8.35. Given the recognition that the use of economic instruments and market mechanisms is relatively recent, exchange of information about different countries' experiences with such approaches should be actively encouraged. In this regard, Governments should encourage the use of existing means of information exchange to look at effective uses of economic instruments.

(d) Increasing understanding of the role of economic instruments and market mechanisms

8.36. Governments should encourage research and analysis on effective uses of economic instruments and incentives with the assistance and support of regional and international economic and environmental organizations, as well as non-governmental research institutes, with a focus on such key issues as:

a. The role of environmental taxation suited to national conditions;

b. The implications of economic instruments and incentives for competitiveness and international trade, and potential needs for appropriate future international cooperation and coordination;

c. The possible social and distributive implications of using various instruments.

(e) Establishing a process for focusing on pricing

8.37. The theoretical advantages of using pricing policies, where appropriate, need to be better understood, and accompanied by greater understanding of what it means to take significant steps in this direction. Processes should therefore be initiated, in cooperation with business, industry, large enterprises, transnational corporations, as well as other social groups, as appropriate, at both the national and international levels, to examine:

a. The practical implications of moving towards greater reliance on pricing that internalize environmental costs appropriate to help achieve sustainable development objectives;

b. The implications for resource pricing in the case of resource-exporting countries, including the implications of such pricing policies for developing countries;

c. The methodologies used in valuing environmental costs.

(f) Enhancing understanding of sustainable development economics

8.38. Increased interest in economic instruments, including market mechanisms, also requires a concerted effort to improve understanding of sustainable development economics by:

a. Encouraging institutions of higher learning to review their curricula and strengthen studies in sustainable development economics;

b. Encouraging regional and international economic organizations and non-governmental research institutes with expertise in this area to provide training sessions and seminars for government officials;

c. Encouraging business and industry, including large industrial enterprises and transnational corporations with expertise in environmental matters, to organize training programmes for the private sector and other groups.

Means of implementation

8.39. This programme involves adjustments or reorientation of policies on the part of Governments. It also involves international and regional economic and environmental organizations and agencies with expertise in this area, including transnational corporations.

(a) Financing and cost evaluation

8.40. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $5 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

D. Establishing systems for integrated environmental and economic accounting

Basis for action

8.41. A first step towards the integration of sustainability into economic management is the establishment of better measurement of the crucial role of the environment as a source of natural capital and as a sink for by-products generated during the production of man-made capital and other human activities. As sustainable development encompasses social, economic and environmental dimensions, it is also important that national accounting procedures are not restricted to measuring the production of goods and services that are conventionally remunerated. A common framework needs to be developed whereby the contributions made by all sectors and activities of society, that are not included in the conventional national accounts, are included, to the extent consistent with sound theory and practicability, in satellite accounts. A programme to develop national systems of integrated environmental and economic accounting in all countries is proposed.

Objectives

8.42. The main objective is to expand existing systems of national economic accounts in order to integrate environment and social dimensions in the accounting framework, including at least satellite systems of accounts for natural resources in all member States. The resulting systems of integrated environmental and economic accounting (IEEA) to be established in all member States at the earliest date should be seen as a complement to, rather than a substitute for, traditional national accounting practices for the foreseeable future. IEEAs would be designed to play an integral part in the national development decision-making process. National accounting agencies should work in close collaboration with national environmental statistics as well as the geographic and natural resource departments. The definition of economically active could be expanded to include people performing productive but unpaid tasks in all countries. This would enable their contribution to be adequately measured and taken into account in decision-making.

Activities

(a) Strengthening international cooperation

8.43. The Statistical Office of the United Nations Secretariat should:

a. Make available to all member States the methodologies contained in the SNA Handbook on Integrated Environmental and Economic Accounting;

b. In collaboration with other relevant United Nations organizations, further develop, test, refine and then standardize the provisional concepts and methods such as those proposed by the SNA Handbook, keeping member States informed of the status of the work throughout this process;

c. Coordinate, in close cooperation with other international organizations, the training of national accountants, environmental statisticians and national technical staff in small groups for the establishment, adaptation and development of national IEEAs.

8.44. The Department of Economic and Social Development of the United Nations Secretariat, in close collaboration with other relevant United Nations organizations, should:

a. Support, in all member States, the utilization of sustainable development indicators in national economic and social planning and decision-making practices, with a view to ensuring that IEEAs are usefully integrated in economic development planning at the national level;

b. Promote improved environmental and economic and social data collection.

(b) Strengthening national accounting systems

8.45. At the national level, the programme could be adopted mainly by the agencies dealing with national accounts, in close cooperation with environmental statistics and natural resource departments, with a view to assisting national economic analysts and decision makers in charge of national economic planning. National institutions should play a crucial role not only as the depositary of the system but also in its adaptation, establishment and continuous use. Unpaid productive work such as domestic work and child care should be included, where appropriate, in satellite national accounts and economic statistics. Time-use surveys could be a first step in the process of developing these satellite accounts.

(c) Establishing an assessment process

8.46. At the international level, the Statistical Commission should assemble and review experience and advise member States on technical and methodological issues related to the further development and implementation of IEEAs in member States.

8.47. Governments should seek to identify and consider measures to correct price distortions arising from environmental programmes affecting land, water, energy and other natural resources.

8.48. Governments should encourage corporations:

a. To provide relevant environmental information through transparent reporting to shareholders, creditors, employees, governmental authorities, consumers and the public;

b. To develop and implement methods and rules for accounting for sustaining development.

(d) Strengthening data and information collection

8.49. National Governments could consider implementing the necessary enhancement in data collection to set in place national IEEAs with a view to contributing pragmatically to sound economic management. Major efforts should be made to augment the capacity to collect and analyse environmental data and information and to integrate it with economic data, including gender disaggregated data. Efforts should also be made to develop physical environmental accounts. International donor agencies should consider financing the development of intersectoral data banks to help ensure that national planning for sustainable development is based on precise, reliable and effective information and is suited to national conditions.

(e) Strengthening technical cooperation

8.50. The Statistical Office of the United Nations Secretariat, in close collaboration with relevant United Nations organizations, should strengthen existing mechanisms for technical cooperation among countries. This should also include exchange of experience in the establishment of IEEAs, particularly in connection with the valuation of non-marketed natural resources and standardization in data collection. The cooperation of business and industry, including large industrial enterprises and transnational corporations with experience in valuation of such resources, should also be sought.

Means of implementation

(a) Financing and cost evaluation

8.51. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $2 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Strengthening institutions

8.52. To ensure the application of IEEAs:

a. National institutions in developing countries could be strengthened to ensure the effective integration of environment and development at the planning and decision-making levels;

b. The Statistical Office should provide the necessary technical support to member States, in close collaboration with the assessment process to be established by the Statistical Commission; the Statistical Office should provide appropriate support for establishing IEEAs, in collaboration with relevant United Nations agencies.

(c) Enhancing the use of information technology

8.53. Guidelines and mechanisms could be developed and agreed upon for the adaptation and diffusion of information technologies to developing countries. State-of-the-art data management technologies should be adopted for the most efficient and widespread use of IEEAs.

(d) Strengthening national capacity

8.54. Governments, with the support of the international community, should strengthen national institutional capacity to collect, store, organize, assess and use data in decision-making. Training in all areas related to the establishment of IEEAs, and at all levels, will be required, especially in developing countries. This should include technical training of those involved in economic and environmental analysis, data collection and national accounting, as well as training decision makers to use such information in a pragmatic and appropriate way.

Agenda 21 – Chapter 9

PROTECTION OF THE ATMOSPHERE

INTRODUCTION

9.1. Protection of the atmosphere is a broad and multidimensional endeavour involving various sectors of economic activity. The options and measures described in the present chapter are recommended for consideration and, as appropriate, implementation by Governments and other bodies in their efforts to protect the atmosphere.

9.2. It is recognized that many of the issues discussed in this chapter are also addressed in such international agreements as the 1985 Vienna Convention for the Protection of the Ozone Layer, the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer as amended, the 1992 United Nations Framework Convention on Climate Change and other international, including regional, instruments. In the case of activities covered by such agreements, it is understood that the recommendations contained in this chapter do not oblige any Government to take measures which exceed the provisions of these legal instruments. However, within the framework of this chapter, Governments are free to carry out additional measures which are consistent with those legal instruments.

9.3. It is also recognized that activities that may be undertaken in pursuit of the objectives of this chapter should be coordinated with social and economic development in an integrated manner with a view to avoiding adverse impacts on the latter, taking into full account the legitimate priority needs of developing countries for the achievement of sustained economic growth and the eradication of poverty.

9.4. In this context particular reference is also made to programme area A of chapter 2 of Agenda 21 (Promoting sustainable development through trade).

9.5. The present chapter includes the following four programme areas:

a. Addressing the uncertainties: improving the scientific basis for decision-making;

b. Promoting sustainable development:

   i. Energy development, efficiency and consumption;

   ii. Transportation;

   iii. Industrial development;

   iv. Terrestrial and marine resource development and land use;

c. Preventing stratospheric ozone depletion;

d. Transboundary atmospheric pollution.

PROGRAMME AREAS

A. Addressing the uncertainties: improving the scientific basis for decision-making

Basis for action

9.6. Concern about climate change and climate variability, air pollution and ozone depletion has created new demands for scientific, economic and social information to reduce the remaining uncertainties in these fields. Better understanding and prediction of the various properties of the atmosphere and of the affected ecosystems, as well as health impacts and their interactions with socio-economic factors, are needed.

Objectives

9.7. The basic objective of this programme area is to improve the understanding of processes that influence and are influenced by the Earth's atmosphere on a global, regional and local scale, including, inter alia, physical, chemical, geological, biological, oceanic, hydrological, economic and social processes; to build capacity and enhance international cooperation; and to improve understanding of the economic and social consequences of atmospheric changes and of mitigation and response measures addressing such changes.

Activities

9.8. Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental and non-governmental organizations, and the private sector, should:

a. Promote research related to the natural processes affecting and being affected by the atmosphere, as well as the critical linkages between sustainable development and atmospheric changes, including impacts on human health, ecosystems, economic sectors and society;

b. Ensure a more balanced geographical coverage of the Global Climate Observing System and its components, including the Global Atmosphere Watch, by facilitating, inter alia, the establishment and operation of additional systematic observation stations, and by contributing to the development, utilization and accessibility of these databases;

c. Promote cooperation in:

   i. The development of early detection systems concerning changes and fluctuations in the atmosphere;

   ii. The establishment and improvement of capabilities to predict such changes and fluctuations and to assess the resulting environmental and socio-economic impacts;

d. Cooperate in research to develop methodologies and identify threshold levels of atmospheric pollutants, as well as atmospheric levels of greenhouse gas concentrations, that would cause dangerous anthropogenic interference with the climate system and the environment as a whole, and the associated rates of change that would not allow ecosystems to adapt naturally;

e. Promote, and cooperate in the building of scientific capacities, the exchange of scientific data and information, and the facilitation of the participation and training of experts and technical staff, particularly of developing countries, in the fields of research, data assembly, collection and assessment, and systematic observation related to the atmosphere.

B. Promoting sustainable development

1. Energy development, efficiency and consumption

Basis for action

9.9. Energy is essential to economic and social development and improved quality of life. Much of the world's energy, however, is currently produced and consumed in ways that could not be sustained if technology were to remain constant and if overall quantities were to increase substantially. The need to control atmospheric emissions of greenhouse and other gases and substances will increasingly need to be based on efficiency in energy production, transmission, distribution and consumption, and on growing reliance on environmentally sound energy systems, particularly new and renewable sources of energy. 1/ All energy sources will need to be used in ways that respect the atmosphere, human health and the environment as a whole.

9.10. The existing constraints to increasing the environmentally sound energy supplies required for pursuing the path towards sustainable development, particularly in developing countries, need to be removed.

Objectives

9.11. The basic and ultimate objective of this programme area is to reduce adverse effects on the atmosphere from the energy sector by promoting policies or programmes, as appropriate, to increase the contribution of environmentally sound and cost-effective energy systems, particularly new and renewable ones, through less polluting and more efficient energy production, transmission, distribution and use. This objective should reflect the need for equity, adequate energy supplies and increasing energy consumption in developing countries, and should take into consideration the situations of countries that are highly dependent on income generated from the production, processing and export, and/or consumption of fossil fuels and associated energy-intensive products and/or the use of fossil fuels for which countries have serious difficulties in switching to alternatives, and the situations of countries highly vulnerable to adverse effects of climate change.

Activities

9.12. Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental and non-governmental organizations, and the private sector, should:

a. Cooperate in identifying and developing economically viable, environmentally sound energy sources to promote the availability of increased energy supplies to support sustainable development efforts, in particular in developing countries;

b. Promote the development at the national level of appropriate methodologies for making integrated energy, environment and economic policy decisions for sustainable development, inter alia, through environmental impact assessments;

c. Promote the research, development, transfer and use of improved energy-efficient technologies and practices, including endogenous technologies in all relevant sectors, giving special attention to the rehabilitation and modernization of power systems, with particular attention to developing countries;

d. Promote the research, development, transfer and use of technologies and practices for environmentally sound energy systems, including new and renewable energy systems, with particular attention to developing countries;

e. Promote the development of institutional, scientific, planning and management capacities, particularly in developing countries, to develop, produce and use increasingly efficient and less polluting forms of energy;

f. Review current energy supply mixes to determine how the contribution of environmentally sound energy systems as a whole, particularly new and renewable energy systems, could be increased in an economically efficient manner, taking into account respective countries' unique social, physical, economic and political characteristics, and examining and implementing, where appropriate, measures to overcome any barriers to their development and use;

g. Coordinate energy plans regionally and subregionally, where applicable, and study the feasibility of efficient distribution of environmentally sound energy from new and renewable energy sources;

h. In accordance with national socio-economic development and environment priorities, evaluate and, as appropriate, promote cost-effective policies or programmes, including administrative, social and economic measures, in order to improve energy efficiency;

i. Build capacity for energy planning and programme management in energy efficiency, as well as for the development, introduction, and promotion of new and renewable sources of energy;

j. Promote appropriate energy efficiency and emission standards or recommendations at the national level, 2/ aimed at the development and use of technologies that minimize adverse impacts on the environment;

k. Encourage education and awareness-raising programmes at the local, national, subregional and regional levels concerning energy efficiency and environmentally sound energy systems;

l. Establish or enhance, as appropriate, in cooperation with the private sector, labelling programmes for products to provide decision makers and consumers with information on opportunities for energy efficiency.

2. Transportation

Basis for action

9.13. The transport sector has an essential and positive role to play in economic and social development, and transportation needs will undoubtedly increase. However, since the transport sector is also a source of atmospheric emissions, there is need for a review of existing transport systems and for more effective design and management of traffic and transport systems.

Objectives

9.14. The basic objective of this programme area is to develop and promote cost-effective policies or programmes, as appropriate, to limit, reduce or control, as appropriate, harmful emissions into the atmosphere and other adverse environmental effects of the transport sector, taking into account development priorities as well as the specific local and national circumstances and safety aspects.

Activities

9.15. Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental and non-governmental organizations, and the private sector, should:

a. Develop and promote, as appropriate, cost-effective, more efficient, less polluting and safer transport systems, particularly integrated rural and urban mass transit, as well as environmentally sound road networks, taking into account the needs for sustainable social, economic and development priorities, particularly in developing countries;

b. Facilitate at the international, regional, subregional and national levels access to and the transfer of safe, efficient, including resource-efficient, and less polluting transport technologies, particularly to the developing countries, including the implementation of appropriate training programmes;

c. Strengthen, as appropriate, their efforts at collecting, analysing and exchanging relevant information on the relation between environment and transport, with particular emphasis on the systematic observation of emissions and the development of a transport database;

d. In accordance with national socio-economic development and environment priorities, evaluate and, as appropriate, promote cost-effective policies or programmes, including administrative, social and economic measures, in order to encourage use of transportation modes that minimize adverse impacts on the atmosphere;

e. Develop or enhance, as appropriate, mechanisms to integrate transport planning strategies and urban and regional settlement planning strategies, with a view to reducing the environmental impacts of transport;

f. Study, within the framework of the United Nations and its regional commissions, the feasibility of convening regional conferences on transport and the environment.

3. Industrial development

Basis for action

9.16. Industry is essential for the production of goods and services and is a major source of employment and income, and industrial development as such is essential for economic growth. At the same time, industry is a major resource and materials user and consequently industrial activities result in emissions into the atmosphere and the environment as a whole. Protection of the atmosphere can be enhanced, inter alia, by increasing resource and materials efficiency in industry, installing or improving pollution abatement technologies and replacing chlorofluorocarbons (CFCs) and other ozone-depleting substances with appropriate substitutes, as well as by reducing wastes and by-products.

Objectives

9.17. The basic objective of this programme area is to encourage industrial development in ways that minimize adverse impacts on the atmosphere by, inter alia, increasing efficiency in the production and consumption by industry of all resources and materials, by improving pollution-abatement technologies and by developing new environmentally sound technologies.

Activities

9.18. Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental and non-governmental organizations, and the private sector, should:

a. In accordance with national socio-economic development and environment priorities, evaluate and, as appropriate, promote cost-effective policies or programmes, including administrative, social and economic measures, in order to minimize industrial pollution and adverse impacts on the atmosphere;

b. Encourage industry to increase and strengthen its capacity to develop technologies, products and processes that are safe, less polluting and make more efficient use of all resources and materials, including energy;

c. Cooperate in the development and transfer of such industrial technologies and in the development of capacities to manage and use such technologies, particularly with respect to developing countries;

d. Develop, improve and apply environmental impact assessments to foster sustainable industrial development;

e. Promote efficient use of materials and resources, taking into account the life cycles of products, in order to realize the economic and environmental benefits of using resources more efficiently and producing fewer wastes;

f. Support the promotion of less polluting and more efficient technologies and processes in industries, taking into account area-specific accessible potentials for energy, particularly safe and renewable sources of energy, with a view to limiting industrial pollution, and adverse impacts on the atmosphere.

4. Terrestrial and marine resource development and land use

Basis for action

9.19. Land-use and resource policies will both affect and be affected by changes in the atmosphere. Certain practices related to terrestrial and marine resources and land use can decrease greenhouse gas sinks and increase atmospheric emissions. The loss of biological diversity may reduce the resilience of ecosystems to climatic variations and air pollution damage. Atmospheric changes can have important impacts on forests, biodiversity, and freshwater and marine ecosystems, as well as on economic activities, such as agriculture. Policy objectives in different sectors may often diverge and will need to be handled in an integrated manner.

Objectives

9.20. The objectives of this programme area are:

a. To promote terrestrial and marine resource utilization and appropriate land-use practices that contribute to:

   i. The reduction of atmospheric pollution and/or the limitation of anthropogenic emissions of greenhouse gases;

   ii. The conservation, sustainable management and enhancement, where appropriate, of all sinks for greenhouse gases;

   iii. The conservation and sustainable use of natural and environmental resources;

b. To ensure that actual and potential atmospheric changes and their socio-economic and ecological impacts are fully taken into account in planning and implementing policies and programmes concerning terrestrial and marine resources utilization and land-use practices.

Activities

9.21. Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental and non-governmental organizations, and the private sector, should:

a. In accordance with national socio-economic development and environment priorities, evaluate and, as appropriate, promote cost-effective policies or programmes, including administrative, social and economic measures, in order to encourage environmentally sound land-use practices;

b. Implement policies and programmes that will discourage inappropriate and polluting land-use practices and promote sustainable utilization of terrestrial and marine resources;

c. Consider promoting the development and use of terrestrial and marine resources and land-use practices that will be more resilient to atmospheric changes and fluctuations;

d. Promote sustainable management and cooperation in the conservation and enhancement, as appropriate, of sinks and reservoirs of greenhouse gases, including biomass, forests and oceans, as well as other terrestrial, coastal and marine ecosystems.

C. Preventing stratospheric ozone depletion

Basis for action

9.22. Analysis of recent scientific data has confirmed the growing concern about the continuing depletion of the Earth's stratospheric ozone layer by reactive chlorine and bromine from man-made CFCs, halons and related substances. While the 1985 Vienna Convention for the Protection of the

Ozone Layer and the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer (as amended in London in 1990) were important steps in international action, the total chlorine loading of the atmosphere of ozone-depleting substances has continued to rise. This can be changed through compliance with the control measures identified within the Protocol.

Objectives

9.23. The objectives of this programme area are:

a. To realize the objectives defined in the Vienna Convention and the Montreal Protocol and its 1990 amendments, including the consideration in those instruments of the special needs and conditions of the developing countries and the availability to them of alternatives to substances that deplete the ozone layer. Technologies and natural products that reduce demand for these substances should be encouraged;

b. To develop strategies aimed at mitigating the adverse effects of ultraviolet radiation reaching the Earth's surface as a consequence of depletion and modification of the stratospheric ozone layer.

Activities

9.24. Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental and non-governmental organizations, and the private sector, should:

a. Ratify, accept or approve the Montreal Protocol and its 1990 amendments; pay their contributions towards the Vienna/Montreal trust funds and the interim multilateral ozone fund promptly; and contribute, as appropriate, towards ongoing efforts under the Montreal Protocol and its implementing mechanisms, including making available substitutes for CFCs and other ozone-depleting substances and facilitating the transfer of the corresponding technologies to developing countries in order to enable them to comply with the obligations of the Protocol;

b. Support further expansion of the Global Ozone Observing System by facilitating - through bilateral and multilateral funding - the establishment and operation of additional systematic observation stations, especially in the tropical belt in the southern hemisphere;

c. Participate actively in the continuous assessment of scientific information and the health and environmental effects, as well as of the technological/economic implications of stratospheric ozone depletion; and consider further actions that prove warranted and feasible on the basis of these assessments;

d. Based on the results of research on the effects of the additional ultraviolet radiation reaching the Earth's surface, consider taking appropriate remedial measures in the fields of human health, agriculture and marine environment;

e. Replace CFCs and other ozone-depleting substances, consistent with the Montreal Protocol, recognizing that a replacement's suitability should be evaluated holistically and not simply based on its contribution to solving one atmospheric or environmental problem.

D. Transboundary atmospheric pollution

Basis for action

9.25. Transboundary air pollution has adverse health impacts on humans and other detrimental environmental impacts, such as tree and forest loss and the acidification of water bodies. The geographical distribution of atmospheric pollution monitoring networks is uneven, with the developing countries severely underrepresented. The lack of reliable emissions data outside Europe and North America is a major constraint to measuring transboundary air pollution. There is also insufficient information on the environmental and health effects of air pollution in other regions.

9.26. The 1979 Convention on Long-range Transboundary Air Pollution, and its protocols, have established a regional regime in Europe and North America, based on a review process and cooperative programmes for systematic observation of air pollution, assessment and information exchange. These programmes need to be continued and enhanced, and their experience needs to be shared with other regions of the world.

Objectives

9.27. The objectives of this programme area are:

a. To develop and apply pollution control and measurement technologies for stationary and mobile sources of air pollution and to develop alternative environmentally sound technologies;

b. To observe and assess systematically the sources and extent of transboundary air pollution resulting from natural processes and anthropogenic activities;

c. To strengthen the capabilities, particularly of developing countries, to measure, model and assess the fate and impacts of transboundary air pollution, through, inter alia, exchange of information and training of experts;

d. To develop capabilities to assess and mitigate transboundary air pollution resulting from industrial and nuclear accidents, natural disasters and the deliberate and/or accidental destruction of natural resources;

e. To encourage the establishment of new and the implementation of existing regional agreements for limiting transboundary air pollution;

f. To develop strategies aiming at the reduction of emissions causing transboundary air pollution and their effects.

Activities

9.28. Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental and non-governmental organizations, the private sector and financial institutions, should:

a. Establish and/or strengthen regional agreements for transboundary air pollution control and cooperate, particularly with developing countries, in the areas of systematic observation and assessment, modelling and the development and exchange of emission control technologies for mobile and stationary sources of air pollution. In this context, greater emphasis should be put on addressing the extent, causes, health and socio-economic impacts of ultraviolet radiation, acidification of the environment and photo-oxidant damage to forests and other vegetation;

b. Establish or strengthen early warning systems and response mechanisms for transboundary air pollution resulting from industrial accidents and natural disasters and the deliberate and/or accidental destruction of natural resources;

c. Facilitate training opportunities and exchange of data, information and national and/or regional experiences;

d. Cooperate on regional, multilateral and bilateral bases to assess transboundary air pollution, and elaborate and implement programmes identifying specific actions to reduce atmospheric emissions and to address their environmental, economic, social and other effects.

Means of implementation

International and regional cooperation

9.29. Existing legal instruments have created institutional structures which relate to the purposes of these instruments, and relevant work should primarily continue in those contexts. Governments should continue to cooperate and enhance their cooperation at the regional and global levels, including cooperation within the United Nations system. In this context reference is made to the recommendations in chapter 38 of Agenda 21 (International institutional arrangements).

Capacity-building

9.30. Countries, in cooperation with the relevant United Nations bodies, international donors and non-governmental organizations, should mobilize technical and financial resources and facilitate technical cooperation with developing countries to reinforce their technical, managerial, planning and administrative capacities to promote sustainable development and the protection of the atmosphere, in all relevant sectors.

Human resource development

9.31. Education and awareness-raising programmes concerning the promotion of sustainable development and the protection of the atmosphere need to be introduced and strengthened at the local, national and international levels in all relevant sectors.

Financial and cost evaluation

9.32. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities under programme area A to be about $640 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

9.33. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of the four-part programme under programme area B to be about $20 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

9.34. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities under programme area C to be in the range of $160-590 million on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

9.35. The Conference secretariat has included costing for technical assistance and pilot programmes under paragraphs 9.32 and 9.33.

Notes

1/ New and renewable energy sources are solar thermal, solar photovoltaic, wind, hydro, biomass, geothermal, ocean, animal and human power, as referred to in the reports of the Committee on the Development and Utilization of New and Renewable Sources of Energy, prepared specifically for the Conference (see A/CONF.151/PC/119 and A/AC.218/1992/5).

2/ This includes standards or recommendations promoted by regional economic integration organizations.

Agenda 21 – Chapter 10
INTEGRATED APPROACH TO THE PLANNING AND MANAGEMENT OF LAND RESOURCES

10.1. Land is normally defined as a physical entity in terms of its topography and spatial nature; a broader integrative view also includes natural resources: the soils, minerals, water and biota that the land comprises. These components are organized in ecosystems which provide a variety of services essential to the maintenance of the integrity of life-support systems and the productive capacity of the environment. Land resources are used in ways that take advantage of all these characteristics. Land is a finite resource, while the natural resources it supports can vary over time and according to management conditions and uses. Expanding human requirements and economic activities are placing ever increasing pressures on land resources, creating competition and conflicts and resulting in suboptimal use of both land and land resources. If, in the future, human requirements are to be met in a sustainable manner, it is now essential to resolve these conflicts and move towards more effective and efficient use of land and its natural resources. Integrated physical and land-use planning and management is an eminently practical way to achieve this. By examining all uses of land in an integrated manner, it makes it possible to minimize conflicts, to make the most efficient trade-offs and to link social and economic development with environmental protection and enhancement, thus helping to achieve the objectives of sustainable development. The essence of the integrated approach finds expression in the coordination of the sectoral planning and management activities concerned with the various aspects of land use and land resources.

10.2. The present chapter consists of one programme area, the integrated approach to the planning and management of land resources, which deals with the reorganization and, where necessary, some strengthening of the decision-making structure, including existing policies, planning and management procedures and methods that can assist in putting in place an integrated approach to land resources. It does not deal with the operational aspects of planning and management, which are more appropriately dealt with under the relevant sectoral programmes. Since the programme deals with an important cross-sectoral aspect of decision-making for sustainable development, it is closely related to a number of other programmes that deal with that issue directly.

PROGRAMME AREA

Integrated approach to the planning and management of land resources

Basis for action

10.3. Land resources are used for a variety of purposes which interact and may compete with one another; therefore, it is desirable to plan and manage all uses in an integrated manner. Integration should take place at two levels, considering, on the one hand, all environmental, social and economic factors (including, for example, impacts of the various economic and social sectors on the environment and natural resources) and, on the other, all environmental and resource components together (i.e., air, water, biota, land, geological and natural resources). Integrated consideration facilitates appropriate choices and trade-offs, thus maximizing sustainable productivity and use. Opportunities to allocate land to different uses arise in the course of major settlement or development projects or in a sequential fashion as lands become available on the market. This in turn provides opportunities to support traditional patterns of sustainable land management or to assign protected status for conservation of biological diversity or critical ecological services.

10.4. A number of techniques, frameworks and processes can be combined to facilitate an integrated approach. They are the indispensable support for the planning and management process, at the national and local level, ecosystem or area levels and for the development of specific plans of action. Many of its elements are already in place but need to be more widely applied, further developed and strengthened. This programme area is concerned primarily with providing a framework that will coordinate decision-making; the content and operational functions are therefore not included here but are dealt with in the relevant sectoral programmes of Agenda 21.

Objectives

10.5. The broad objective is to facilitate allocation of land to the uses that provide the greatest sustainable benefits and to promote the transition to a sustainable and integrated management of land resources. In doing so, environmental, social and economic issues should be taken into consideration. Protected areas, private property rights, the rights of indigenous people and their communities and other local communities and the economic role of women in agriculture and rural development, among other issues, should be taken into account. In more specific terms, the objectives are as follows:

a. To review and develop policies to support the best possible use of land and the sustainable management of land resources, by not later than 1996;

b. To improve and strengthen planning, management and evaluation systems for land and land resources, by not later than 2000;

c. To strengthen institutions and coordinating mechanisms for land and land resources, by not later than 1998;

d. To create mechanisms to facilitate the active involvement and participation of all concerned, particularly communities and people at the local level, in decision-making on land use and management, by not later than 1996.

Activities

(a) Management-related activities

Developing supportive policies and policy instruments

10.6. Governments at the appropriate level, with the support of regional and international organizations, should ensure that policies and policy instruments support the best possible land use and sustainable management of land resources. Particular attention should be given to the role of agricultural land. To do this, they should:

a. Develop integrated goal-setting and policy formulation at the national, regional and local levels that takes into account environmental, social, demographic and economic issues;

b. Develop policies that encourage sustainable land use and management of land resources and take the land resource base, demographic issues and the interests of the local population into account;

c. Review the regulatory framework, including laws, regulations and enforcement procedures, in order to identify improvements needed to support sustainable land use and management of land resources and restricts the transfer of productive arable land to other uses;

d. Apply economic instruments and develop institutional mechanisms and incentives to encourage the best possible land use and sustainable management of land resources;

e. Encourage the principle of delegating policy-making to the lowest level of public authority consistent with effective action and a locally driven approach.

Strengthening planning and management systems

10.7. Governments at the appropriate level, with the support of regional and international organizations, should review and, if appropiate, revise planning and management systems to facilitate an integrated approach. To do this, they should:

a. Adopt planning and management systems that facilitate the integration of environmental components such as air, water, land and other natural resources, using landscape ecological planning (LANDEP) or other approaches that focus on, for example, an ecosystem or a watershed;

b. Adopt strategic frameworks that allow the integration of both developmental and environmental goals; examples of these frameworks include sustainable livelihood systems, rural development, the World Conservation Strategy/Caring for the Earth, primary environmental care (PEC) and others;

c. Establish a general framework for land-use and physical planning within which specialized and more detailed sectoral plans (e.g., for protected areas, agriculture, forests, human settlements, rural development) can be developed; establish intersectoral consultative bodies to streamline project planning and implementation;

d. Strengthen management systems for land and natural resources by including appropriate traditional and indigenous methods; examples of these practices include pastoralism, Hema reserves (traditional Islamic land reserves) and terraced agriculture;

e. Examine and, if necessary, establish innovative and flexible approaches to programme funding;

f. Compile detailed land capability inventories to guide sustainable land resources allocation, management and use at the national and local levels.

Promoting application of appropriate tools for planning and management

10.8. Governments at the appropriate level, with the support of national and international organizations, should promote the improvement, further development and widespread application of planning and management tools that facilitate an integrated and sustainable approach to land and resources. To do this, they should:

a. Adopt improved systems for the interpretation and integrated analysis of data on land use and land resources;

b. Systematically apply techniques and procedures for assessing the environmental, social and economic impacts, risks, costs and benefits of specific actions;

c. Analyse and test methods to include land and ecosystem functions and land resources values in national accounts.

Raising awareness

10.9. Governments at the appropriate level, in collaboration with national institutions and interest groups and with the support of regional and international organizations, should launch awareness-raising campaigns to alert and educate people on the importance of integrated land and land resources management and the role that individuals and social groups can play in it. This should be accompanied by provision of the means to adopt improved practices for land use and sustainable management.

Promoting public participation

10.10. Governments at the appropriate level, in collaboration with national organizations and with the support of regional and international organizations, should establish innovative procedures, programmes, projects and services that facilitate and encourage the active participation of those affected in the decision-making and implementation process, especially of groups that have, hitherto, often been excluded, such as women, youth, indigenous people and their communities and other local communities.

(b) Data and information

Strengthening information systems

10.11. Governments at the appropriate level, in collaboration with national institutions and the private sector and with the support of regional and international organizations, should strengthen the information systems necessary for making decisions and evaluating future changes on land use and management. The needs of both men and women should be taken into account. To do this, they should:

a. Strengthen information, systematic observation and assessment systems for environmental, economic and social data related to land resources at the global, regional, national and local levels and for land capability and land-use and management patterns;

b. Strengthen coordination between existing sectoral data systems on land and land resources and strengthen national capacity to gather and assess data;

c. Provide the appropriate technical information necessary for informed decision-making on land use and management in an accessible form to all sectors of the population, especially to local communities and women;

d. Support low-cost, community-managed systems for the collection of comparable information on the status and processes of change of land resources, including soils, forest cover, wildlife, climate and other elements.

(c) International and regional coordination and cooperation Establishing regional machinery

10.12. Governments at the appropriate level, with the support of regional and international organizations, should strengthen regional cooperation and exchange of information on land resources. To do this, they should:

a. Study and design regional policies to support programmes for land-use and physical planning;

b. Promote the development of land-use and physical plans in the countries of the region;

c. Design information systems and promote training;

d. Exchange, through networks and other appropriate means, information on experiences with the process and results of integrated and participatory planning and management of land resources at the national and local levels.

Means of implementation

(a) Financing and cost evaluation

10.13. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $50 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

Enhancing scientific understanding of the land resources system

10.14. Governments at the appropriate level, in collaboration with the national and international scientific community and with the support of appropriate national and international organizations, should promote and support research, tailored to local environments, on the land resources system and the implications for sustainable development and management practices. Priority should be given, as appropriate, to:

a. Assessment of land potential capability and ecosystem functions;

b. Ecosystemic interactions and interactions between land resources and social, economic and environmental systems;

c. Developing indicators of sustainability for land resources, taking into account environmental, economic, social, demographic, cultural and political factors.

Testing research findings through pilot projects

10.15. Governments at the appropriate level, in collaboration with the national and international scientific community and with the support of the relevant international organizations, should research and test, through pilot projects, the applicability of improved approaches to the integrated planning and management of land resources, including technical, social and institutional factors.

(c) Human resource development

Enhancing education and training

10.16. Governments at the appropriate level, in collaboration with the appropriate local authorities, non-governmental organizations and international institutions, should promote the development of the human resources that are required to plan and manage land and land resources sustainably. This should be done by providing incentives for local initiatives and by enhancing local management capacity, particularly of women, through:

a. Emphasizing interdisciplinary and integrative approaches in the curricula of schools and technical, vocational and university training;

b. Training all relevant sectors concerned to deal with land resources in an integrated and sustainable manner;

c. Training communities, relevant extension services, community-based groups and non-governmental organizations on land management techniques and approaches applied successfully elsewhere.

(d) Capacity-building Strengthening technological capacity

10.17. Governments at the appropriate level, in cooperation with other Governments and with the support of relevant international organizations, should promote focused and concerted efforts for education and training and the transfer of techniques and technologies that support the various aspects of the sustainable planning and management process at the national, state/provincial and local levels.

Strengthening institutions

10.18. Governments at the appropriate level, with the support of appropriate international organizations, should:

a. Review and, where appropriate, revise the mandates of institutions that deal with land and natural resources to include explicitly the interdisciplinary integration of environmental, social and economic issues;

b. Strengthen coordinating mechanisms between institutions that deal with land-use and resources management to facilitate integration of sectoral concerns and strategies;

c. Strengthen local decision-making capacity and improve coordination with higher levels.

Agenda 21 – Chapter 11
COMBATING DEFORESTATION

PROGRAMME AREAS

A. Sustaining the multiple roles and functions of all types of forests, forest lands and woodlands

Basis for action

11.1. There are major weaknesses in the policies, methods and mechanisms adopted to support and develop the multiple ecological, economic, social and cultural roles of trees, forests and forest lands. Many developed countries are confronted with the effects of air pollution and fire damage on their forests. More effective measures and approaches are often required at the national level to improve and harmonize policy formulation, planning and programming; legislative measures and instruments; development patterns; participation of the general public, especially women and indigenous people; involvement of youth; roles of the private sector, local organizations, non-governmental organizations and cooperatives; development of technical and multidisciplinary skills and quality of human resources; forestry extension and public education; research capability and support; administrative structures and mechanisms, including intersectoral coordination, decentralization and responsibility and incentive systems; and dissemination of information and public relations. This is especially important to ensure a rational and holistic approach to the sustainable and environmentally sound development of forests. The need for securing the multiple roles of forests and forest lands through adequate and appropriate institutional strengthening has been repeatedly emphasized in many of the reports, decisions and recommendations of FAO, ITTO, UNEP, the World Bank, IUCN and other organizations.

Objectives

11.2. The objectives of this programme area are as follows:

a. To strengthen forest-related national institutions, to enhance the scope and effectiveness of activities related to the management, conservation and sustainable development of forests, and to effectively ensure the sustainable utilization and production of forests' goods and services in both the developed and the developing countries; by the year 2000, to strengthen the capacities and capabilities of national institutions to enable them to acquire the necessary knowledge for the protection and conservation of forests, as well as to expand their scope and, correspondingly, enhance the effectiveness of programmes and activities related to the management and development of forests;

b. To strengthen and improve human, technical and professional skills, as well as expertise and capabilities to effectively formulate and implement policies, plans, programmes, research and projects on management, conservation and sustainable development of all types of forests and forest-based resources, and forest lands inclusive, as well as other areas from which forest benefits can be derived.

Activities

(a) Management-related activities

11.3 Governments at the appropriate level, with the support of regional, subregional and international organizations, should, where necessary, enhance institutional capability to promote the multiple roles and functions of all types of forests and vegetation inclusive of other related lands and forest-based resources in supporting sustainable development and environmental conservation in all sectors. This should be done, wherever possible and necessary, by strengthening and/or modifying the existing structures and arrangements, and by improving cooperation and coordination of their respective roles. Some of the major activities in this regard are as follows:

a. Rationalizing and strengthening administrative structures and mechanisms, including provision of adequate levels of staff and allocation of responsibilities, decentralization of decision-making, provision of infrastructural facilities and equipment, intersectoral coordination and an effective system of communication;

b. Promoting participation of the private sector, labour unions, rural cooperatives, local communities, indigenous people, youth, women, user groups and non-governmental organizations in forest-related activities, and access to information and training programmes within the national context;

c. Reviewing and, if necessary, revising measures and programmes relevant to all types of forests and vegetation, inclusive of other related lands and forest-based resources, and relating them to other land uses and development policies and legislation; promoting adequate legislation and other measures as a basis against uncontrolled conversion to other types of land uses;

d. Developing and implementing plans and programmes, including definition of national and, if necessary, regional and subregional goals, programmes and criteria for their implementation and subsequent improvement;

e. Establishing, developing and sustaining an effective system of forest extension and public education to ensure better awareness, appreciation and management of forests with regard to the multiple roles and values of trees, forests and forest lands;

f. Establishing and/or strengthening institutions for forest education and training, as well as forestry industries, for developing an adequate cadre of trained and skilled staff at the professional, technical and vocational levels, with emphasis on youth and women;

g. Establishing and strengthening capabilities for research related to the different aspects of forests and forest products, for example, on the sustainable management of forests, research on biodiversity, on the effects of air-borne pollutants, on traditional uses of forest resources by local populations and indigenous people, and on improving market returns and other non-market values from the management of forests.

(b) Data and information

11.4. Governments at the appropriate level, with the assistance and cooperation of international, regional, subregional and bilateral agencies, where relevant, should develop adequate databases and baseline information necessary for planning and programme evaluation. Some of the more specific activities include the following:

a. Collecting, compiling and regularly updating and distributing information on land classification and land use, including data on forest cover, areas suitable for afforestation, endangered species, ecological values, traditional/indigenous land use values, biomass and productivity, correlating demographic, socio-economic and forest resources information at the micro- and macro-levels, and undertaking periodic analyses of forest programmes;

b. Establishing linkages with other data systems and sources relevant to supporting forest management, conservation and development, while further developing or reinforcing existing systems such as geographic information systems, as appropriate;

c. Creating mechanisms to ensure public access to this information.

(c) International and regional cooperation and coordination

11.5. Governments at the appropriate level and institutions should cooperate in the provision of expertise and other support and the promotion of international research efforts, in particular with a view to enhancing transfer of technology and specialized training and ensuring access to experiences and research results. There is need for strengthening coordination and improving the performance of existing forest-related international organizations in providing technical cooperation and support to interested countries for the management, conservation and sustainable development of forests.

Means of implementation

(a) Financial and cost evaluation

11.6. The secretariat of the Conference has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $2.5 billion, including about $860 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

11.7. The planning, research and training activities specified will form the scientific and technological means for implementing the programme, as well as its output. The systems, methodology and know-how generated by the programme will help improve efficiency. Some of the specific steps involved should include:

a. Analysing achievements, constraints and social issues for supporting programme formulation and implementation;

b. Analysing research problems and research needs, research planning and implementation of specific research projects;

c. Assessing needs for human resources, skill development and training;

d. Developing, testing and applying appropriate methodologies/approaches in implementing forest programmes and plans.

(c) Human resource development

11.8. The specific components of forest education and training will effectively contribute to human resource development. These include:

a. Launching of graduate and post-graduate degree, specialization and research programmes;

b. Strengthening of pre-service, in-service and extension service training programmes at the technical and vocational levels, including training of trainers/teachers, and developing curriculum and teaching materials/methods;

c. Special training for staff of national forest-related organizations in aspects such as project formulation, evaluation and periodical evaluations.

(d) Capacity-building

11.9. This programme area is specifically concerned with capacity-building in the forest sector and all programme activities specified contribute to that end. In building new and strengthened capacities, full advantage should be taken of the existing systems and experience.

B. Enhancing the protection, sustainable management and conservation of all forests, and the greening of degraded areas, through forest rehabilitation, afforestation, reforestation and other rehabilitative means

Basis for action

11.10. Forests world wide have been and are being threatened by uncontrolled degradation and conversion to other types of land uses, influenced by increasing human needs; agricultural expansion; and environmentally harmful mismanagement, including, for example, lack of adequate forest-fire control and anti-poaching measures, unsustainable commercial logging, overgrazing and unregulated browsing, harmful effects of airborne pollutants, economic incentives and other measures taken by other sectors of the economy. The impacts of loss and degradation of forests are in the form of soil erosion; loss of biological diversity, damage to wildlife habitats and degradation of watershed areas, deterioration of the quality of life and reduction of the options for development.

11.11. The present situation calls for urgent and consistent action for conserving and sustaining forest resources. The greening of suitable areas, in all its component activities, is an effective way of increasing public awareness and participation in protecting and managing forest resources. It should include the consideration of land use and tenure patterns and local needs and should spell out and clarify the specific objectives of the different types of greening activities.

Objectives

11.12. The objectives of this programme area are as follows:

a. To maintain existing forests through conservation and management, and sustain and expand areas under forest and tree cover, in appropriate areas of both developed and developing countries, through the conservation of natural forests, protection, forest rehabilitation, regeneration, afforestation, reforestation and tree planting, with a view to maintaining or restoring the ecological balance and expanding the contribution of forests to human needs and welfare;

b. To prepare and implement, as appropriate, national forestry action programmes and/or plans for the management, conservation and sustainable development of forests. These programmes and/or plans should be integrated with other land uses. In this context, country-driven national forestry action programmes and/or plans under the Tropical Forestry Action Programme are currently being implemented in more than 80 countries, with the support of the international community;

c. To ensure sustainable management and, where appropriate, conservation of existing and future forest resources;

d. To maintain and increase the ecological, biological, climatic, socio-cultural and economic contributions of forest resources;

e. To facilitate and support the effective implementation of the non-legally binding authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests, adopted by the United Nations Conference on Environment and Development, and on the basis of the implementation of these principles to consider the need for and the feasibility of all kinds of appropriate internationally agreed arrangements to promote international cooperation on forest management, conservation and sustainable development of all types of forests, including afforestation, reforestation and rehabilitation.

Activities

(a) Management-related activities

11.13. Governments should recognize the importance of categorizing forests, within the framework of long-term forest conservation and management policies, into different forest types and setting up sustainable units in every region/watershed with a view to securing the conservation of forests. Governments, with the participation of the private sector, non-governmental organizations, local community groups, indigenous people, women, local government units and the public at large, should act to maintain and expand the existing vegetative cover wherever ecologically, socially and economically feasible, through technical cooperation and other forms of support. Major activities to be considered include:

a. Ensuring the sustainable management of all forest ecosystems and woodlands, through improved proper planning, management and timely implementation of silvicultural operations, including inventory and relevant research, as well as rehabilitation of degraded natural forests to restore productivity and environmental contributions, giving particular attention to human needs for economic and ecological services, wood-based energy, agroforestry, non-timber forest products and services, watershed and soil protection, wildlife management, and forest genetic resources;

b. Establishing, expanding and managing, as appropriate to each national context, protected area systems, which includes systems of conservation units for their environmental, social and spiritual functions and values, including conservation of forests in representative ecological systems and landscapes, primary old-growth forests, conservation and management of wildlife, nomination of World Heritage Sites under the World Heritage Convention, as appropriate, conservation of genetic resources, involving in situ and ex situ measures and undertaking supportive measures to ensure sustainable utilization of biological resources and conservation of biological diversity and the traditional forest habitats of indigenous people, forest dwellers and local communities;

c. Undertaking and promoting buffer and transition zone management;

d. Carrying out revegetation in appropriate mountain areas, highlands, bare lands, degraded farm lands, arid and semi-arid lands and coastal areas for combating desertification and preventing erosion problems and for other protective functions and national programmes for rehabilitation of degraded lands, including community forestry, social forestry, agroforestry and silvipasture, while also taking into account the role of forests as national carbon reservoirs and sinks;

e. Developing industrial and non-industrial planted forests in order to support and promote national ecologically sound afforestation and reforestation/regeneration programmes in suitable sites, including upgrading of existing planted forests of both industrial and non-industrial and commercial purpose to increase their contribution to human needs and to offset pressure on primary/old growth forests. Measures should be taken to promote and provide intermediate yields and to improve the rate of returns on investments in planted forests, through interplanting and underplanting valuable crops;

f. Developing/strengthening a national and/or master plan for planted forests as a priority, indicating, inter alia, the location, scope and species, and specifying areas of existing planted forests requiring rehabilitation, taking into account the economic aspect for future planted forest development, giving emphasis to native species;

g. Increasing the protection of forests from pollutants, fire, pests and diseases and other human-made interferences such as forest poaching, mining and unmitigated shifting cultivation, the uncontrolled introduction of exotic plant and animal species, as well as developing and accelerating research for a better understanding of problems relating to the management and regeneration of all types of forests; strengthening and/or establishing appropriate measures to assess and/or check inter-border movement of plants and related materials;

h. Stimulating development of urban forestry for the greening of urban, peri-urban and rural human settlements for amenity, recreation and production purposes and for protecting trees and groves;

i. Launching or improving opportunities for particpation of all people, including youth, women, indigenous people and local communities in the formulation, development and implementation of forest-related programmes and other activities, taking due account of the local needs and cultural values;

j. Limiting and aiming to halt destructive shifting cultivation by addressing the underlying social and ecological causes.

(b) Data and information

11.14. Management-related activities should involve collection, compilation and analysis of data/information, including baseline surveys. Some of the specific activities include the following:

a. Carrying out surveys and developing and implementing land-use plans for appropriate greening/planting/afforestation/reforestation/forest rehabilitation;

b. Consolidating and updating land-use and forest inventory and management information for management and land-use planning of wood and non-wood resources, including data on shifting cultivation and other agents of forest destruction;

c. Consolidating information on genetic resources and related biotechnology, including surveys and studies, as necessary;

d. Carrying out surveys and research on local/indigenous knowledge of trees and forests and their uses to improve the planning and implementation of sustainable forest management;

e. Compiling and analysing research data on species/site interaction of species used in planted forests and assessing the potential impact on forests of climatic change, as well as effects of forests on climate, and initiating in-depth studies on the carbon cycle relating to different forest types to provide scientific advice and technical support;

f. Establishing linkages with other data/information sources that relate to sustainable management and use of forests and improving access to data and information;

g. Developing and intensifying research to improve knowledge and understanding of problems and natural mechanisms related to the management and rehabilitation of forests, including research on fauna and its interrelation with forests;

h. Consolidating information on forest conditions and site-influencing immissions and emissions.

(c) International and regional cooperation and coordination

11.15. The greening of appropriate areas is a task of global importance and impact. The international and regional community should provide technical cooperation and other means for this programme area. Specific activities of an international nature, in support of national efforts, should include the following:

a. Increasing cooperative actions to reduce pollutants and trans-boundary impacts affecting the health of trees and forests and conservation of representative ecosystems;

b. Coordinating regional and subregional research on carbon sequestration, air pollution and other environmental issues;

c. Documenting and exchanging information/experience for the benefit of countries with similar problems and prospects;

d. Strengthening the coordination and improving the capacity and ability of intergovernmental organizations such as FAO, ITTO, UNEP and UNESCO to provide technical support for the management, conservation and sustainable development of forests, including support for the negotiation of the International Tropical Timber Agreement of 1983, due in 1992/93.

Means of implementation

(a) Financial and cost evaluation

11.16. The secretariat of the Conference has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $10 billion, including about $3.7 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

11.17. Data analysis, planning, research, transfer/development of technology and/or training activities form an integral part of the programme activities, providing the scientific and technological means of implementation. National institutions should:

a. Develop feasibility studies and operational planning related to major forest activities;

b. Develop and apply environmentally sound technology relevant to the various activities listed;

c. Increase action related to genetic improvement and application of biotechnology for improving productivity and tolerance to environmental stress and including, for example, tree breeding, seed technology, seed procurement networks, germ-plasm banks, "in vitro" techniques, and in situ and ex situ conservation.

(c) Human resource development

11.18. Essential means for effectively implementing the activities include training and development of appropriate skills, working facilities and conditions, public motivation and awareness. Specific activities include:

a. Providing specialized training in planning, management, environmental conservation, biotechnology etc.;

b. Establishing demonstration areas to serve as models and training facilities;

c. Supporting local organizations, communities, non-governmental organizations and private land owners, in particular women, youth, farmers and indigenous people/shifting cultivators, through extension and provision of inputs and training.

(d) Capacity-building

11.19. National Governments, the private sector, local organizations/communities, indigenous people, labour unions and non-governmental organizations should develop capacities, duly supported by relevant international organizations, to implement the programme activities. Such capacities should be developed and strengthened in harmony with the programme activities. Capacity-building activities include policy and legal frameworks, national institution building, human resource development, development of research and technology, development of infrastructure, enhancement of public awareness etc.

C. Promoting efficient utilization and assessment to recover the full valuation of the goods and services provided by forests, forest lands and woodlands

Basis for action

11.20. The vast potential of forests and forest lands as a major resource for development is not yet fully realized. The improved management of forests can increase the production of goods and services and, in particular, the yield of wood and non-wood forest products, thus helping to generate additional employment and income, additional value through processing and trade of forest products, increased contribution to foreign exchange earnings, and increased return on investment. Forest resources, being renewable, can be sustainably managed in a manner that is compatible with environmental conservation. The implications of the harvesting of forest resources for the other values of the forest should be taken fully into consideration in the development of forest policies. It is also possible to increase the value of forests through non-damaging uses such as eco-tourism and the managed supply of genetic materials. Concerted action is needed in order to increase people's perception of the value of forests and of the benefits they provide. The survival of forests and their continued contribution to human welfare depends to a great extent on succeeding in this endeavour.

Objectives

11.21. The objectives of this programme area are as follows:

a. To improve recognition of the social, economic and ecological values of trees, forests and forest lands, including the consequences of the damage caused by the lack of forests; to promote methodologies with a view to incorporating social, economic and ecological values of trees, forests and forest lands into the national economic accounting systems; to ensure their sustainable management in a way that is consistent with land use, environmental considerations and development needs;

b. To promote efficient, rational and sustainable utilization of all types of forests and vegetation inclusive of other related lands and forest-based resources, through the development of efficient forest-based processing industries, value-adding secondary processing and trade in forest products, based on sustainably managed forest resources and in accordance with plans that integrate all wood and non-wood values of forests;

c. To promote more efficient and sustainable use of forests and trees for fuelwood and energy supplies;

d. To promote more comprehensive use and economic contributions of forest areas by incorporating eco-tourism into forest management and planning.

Activities

(a) Management-related activities

11.22. Governments, with the support of the private sector, scientific institutions, indigenous people, non-governmental organizations, cooperatives and entrepreneurs, where appropriate, should undertake the following activities, properly coordinated at the national level, with financial and technical cooperation from international organizations:

a. Carrying out detailed investment studies, supply-demand harmonization and environmental impact analysis to rationalize and improve trees and forest utilization and to develop and establish appropriate incentive schemes and regulatory measures, including tenurial arrangements, to provide a favourable investment climate and promote better management;

b. Formulating scientifically sound criteria and guidelines for the management, conservation and sustainable development of all types of forests;

c. Improving environmentally sound methods and practices of forest harvesting, which are ecologically sound and economically viable, including planning and management, improved use of equipment, storage and transportation to reduce and, if possible, maximize the use of waste and improve value of both wood and non-wood forest products;

d. Promoting the better use and development of natural forests and woodlands, including planted forests, wherever possible, through appropriate and environmentally sound and economically viable activities, including silvicultural practices and management of other plant and animal species;

e. Promoting and supporting the downstream processing of forest products to increase retained value and other benefits;

f. Promoting/popularizing non-wood forest products and other forms of forest resources, apart from fuelwood (e.g., medicinal plants, dyes, fibres, gums, resins, fodder, cultural products, rattan, bamboo) through programmes and social forestry/participatory forest activities, including research on their processing and uses;

g. Developing, expanding and/or improving the effectiveness and efficiency of forest-based processing industries, both wood and non-wood based, involving such aspects as efficient conversion technology and improved sustainable utilization of harvesting and process residues; promoting underutilized species in natural forests through research, demonstration and commercialization; promoting value-adding secondary processing for improved employment, income and retained value; and promoting/improving markets for, and trade in, forest products through relevant institutions, policies and facilities;

h. Promoting and supporting the management of wildlife, as well as eco-tourism, including farming, and encouraging and supporting the husbandry and cultivation of wild species, for improved rural income and employment, ensuring economic and social benefits without harmful ecological impacts;

i. Promoting appropriate small-scale forest-based enterprises for supporting rural development and local entrepreneurship;

j. Improving and promoting methodologies for a comprehensive assessment that will capture the full value of forests, with a view to including that value in the market-based pricing structure of wood and non-wood based products;

k. Harmonizing sustainable development of forests with national development needs and trade policies that are compatible with the ecologically sound use of forest resources, using, for example, the ITTO Guidelines for Sustainable Management of Tropical Forests;

l. Developing, adopting and strengthening national programmes for accounting the economic and non-economic value of forests.

(b) Data and information

11.23. The objectives and management-related activities presuppose data and information analysis, feasibility studies, market surveys and review of technological information. Some of the relevant activities include:

a. Undertaking analysis of supply and demand for forest products and services, to ensure efficiency in their utilization, wherever necessary;

b. Carrying out investment analysis and feasibility studies, including environmental impact assessment, for establishing forest-based processing enterprises;

c. Conducting research on the properties of currently underutilized species for their promotion and commercialization;

d. Supporting market surveys of forest products for trade promotion and intelligence;

e. Facilitating the provision of adequate technological information as a measure to promote better utilization of forest resources.

(c) International and regional cooperation and coordination

11.24. Cooperation and assistance of international organizations and the international community in technology transfer, specialization and promotion of fair terms of trade, without resorting to unilateral restrictions and/or bans on forest products contrary to GATT and other multilateral trade agreements, the application of appropriate market mechanisms and incentives will help in addressing global environmental concerns. Strengthening the coordination and performance of existing international organizations, in particular FAO, UNIDO, UNESCO, UNEP, ITC/UNCTAD/GATT, ITTO and ILO, for providing technical assistance and guidance in this programme area is another specific activity.

Means of implementation

(a) Financial and cost evaluation

11.25. The secretariat of the Conference has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $18 billion, including about $880 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

11.26. The programme activities presuppose major research efforts and studies, as well as improvement of technology. This should be coordinated by national Governments, in collaboration with and supported by relevant international organizations and institutions. Some of the specific components include:

a. Research on properties of wood and non-wood products and their uses, to promote improved utilization;

b. Development and application of environmentally sound and less-polluting technology for forest utilization;

c. Models and techniques of outlook analysis and development planning;

d. Scientific investigations on the development and utilization of non-timber forest products;

e. Appropriate methodologies to comprehensively assess the value of forests.

(c) Human resource development

11.27. The success and effectiveness of the programme area depends on the availability of skilled personnel. Specialized training is an important factor in this regard. New emphasis should be given to the incorporation of women. Human resource development for programme implementation, in quantitative and qualitative terms, should include:

a. Developing required specialized skills to implement the programme, including establishing special training facilities at all levels;

b. Introducing/strengthening refresher training courses, including fellowships and study tours, to update skills and technological know-how and improve productivity;

c. Strengthening capability for research, planning, economic analysis, periodical evaluations and evaluation, relevant to improved utilization of forest resources;

d. Promoting efficiency and capability of private and cooperative sectors through provision of facilities and incentives.

(d) Capacity-building

11.28. Capacity-building, including strengthening of existing capacity, is implicit in the programme activities. Improving administration, policy and plans, national institutions, human resources, research and scientific capabilities, technology development, and periodical evaluations and evaluation are important components of capacity-building.

D. Establishing and/or strengthening capacities for the planning, assessment and systematic observations of forests and related programmes, projects and activities, including commercial trade and processes

Basis for action

11.29. Assessment and systematic observations are essential components of long-term planning, for evaluating effects, quantitatively and qualitatively, and for rectifying inadequacies. This mechanism, however, is one of the often neglected aspects of forest resources, management, conservation and development. In many cases, even the basic information related to the area and type of forests, existing potential and volume of harvest is lacking. In many developing countries, there is a lack of structures and mechanisms to carry out these functions. There is an urgent need to rectify this situation for a better understanding of the role and importance of forests and to realistically plan for their effective conservation, management, regeneration, and sustainable development.

Objectives

11.30. The objectives of this programme area are as follows:

a. To strengthen or establish systems for the assessment and systematic observations of forests and forest lands with a view to assessing the impacts of programmes, projects and activities on the quality and extent of forest resources, land available for afforestation, and land tenure, and to integrate the systems in a continuing process of research and in-depth analysis, while ensuring necessary modifications and improvements for planning and decision-making. Specific emphasis should be given to the participation of rural people in these processes;

b. To provide economists, planners, decision makers and local communities with sound and adequate updated information on forests and forest land resources.

Activities

(a) Management-related activities

11.31. Governments and institutions, in collaboration, where necessary, with appropriate international agencies and organizations, universities and non-governmental organizations, should undertake assessments and systematic observations of forests and related programmes and processes with a view to their continuous improvement. This should be linked to related activities of research and management and, wherever possible, be built upon existing systems. Major activities to be considered are:

a. Assessing and carrying out systematic observations of the quantitative and qualitative situation and changes of forest cover and forest resources endowments, including land classification, land use and updates of its status, at the appropriate national level, and linking this activity, as appropriate, with planning as a basis for policy and programme formulation;

b. Establishing national assessment and systematic observation systems and evaluation of programmes and processes, including establishment of definitions, standards, norms and intercalibration methods, and the capability for initiating corrective actions as well as improving the formulation and implementation of programmes and projects;

c. Making estimates of impacts of activities affecting forestry developments and conservation proposals, in terms of key variables such as developmental goals, benefits and costs, contributions of forests to other sectors, community welfare, environmental conditions and biological diversity and their impacts at the local, regional and global levels, where appropriate, to assess the changing technological and financial needs of countries;

d. Developing national systems of forest resource assessment and valuation, including necessary research and data analysis, which account for, where possible, the full range of wood and non-wood forest products and services, and incorporating results in plans and strategies and, where feasible, in national systems of accounts and planning;

e. Establishing necessary intersectoral and programme linkages, including improved access to information, in order to support a holistic approach to planning and programming.

(b) Data and information

11.32. Reliable data and information are vital to this programme area. National Governments, in collaboration, where necessary, with relevant international organizations, should, as appropriate, undertake to improve data and information continuously and to ensure its exchange. Major activities to be considered are as follows:

a. Collecting, consolidating and exchanging existing information and establishing baseline information on aspects relevant to this programme area;

b. Harmonizing the methodologies for programmes involving data and information activities to ensure accuracy and consistency;

c. Undertaking special surveys on, for example, land capability and suitability for afforestation action;

d. Enhancing research support and improving access to and exchange of research results.

(c) International and regional cooperation and coordination

11.33. The international community should extend to the Governments concerned necessary technical and financial support for implementing this programme area, including consideration of the following activities:

a. Establishing conceptual framework and formulating acceptable criteria, norms and definitions for systematic observations and assessment of forest resources;

b. Establishing and strengthening national institutional coordination mechanisms for forest assessment and systematic observation activities;

c. Strengthening existing regional and global networks for the exchange of relevant information;

d. Strengthening the capacity and ability and improving the performance of existing international organizations, such as the Consultative Group on International Agricultural Research (CGIAR), FAO, ITTO, UNEP, UNESCO and UNIDO, to provide technical support and guidance in this programme area.

Means of implementation

(a) Financial and cost evaluation

11.34. The secretariat of the Conference has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $750 million, including about $230 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

11.35. Accelerating development consists of implementing the management-related and data/information activities cited above. Activities related to global environmental issues are those that will contribute to global information for assessing/evaluating/addressing environmental issues on a worldwide basis. Strengthening the capacity of international institutions consists of enhancing the technical staff and the executing capacity of several international organizations in order to meet the requirements of countries.

(b) Scientific and technological means

11.36. Assessment and systematic observation activities involve major research efforts, statistical modelling and technological innovation. These have been internalized into the management-related activities. The activities in turn will improve the technological and scientific content of assessment and periodical evaluations. Some of the specific scientific and technological components included under these activities are:

a. Developing technical, ecological and economic methods and models related to periodical evaluations and evaluation;

b. Developing data systems, data processing and statistical modelling;

c. Remote sensing and ground surveys;

d. Developing geographic information systems;

e. Assessing and improving technology.

11.37. These are to be linked and harmonized with similar activities and components in the other programme areas.

(c) Human resource development

11.38. The programme activities foresee the need and include provision for human resource development in terms of specialization (e.g., the use of remote-sensing, mapping and statistical modelling), training, technology transfer, fellowships and field demonstrations.

(d) Capacity-building

11.39. National Governments, in collaboration with appropriate international organizations and institutions, should develop the necessary capacity for implementing this programme area. This should be harmonized with capacity-building for other programme areas. Capacity-building should cover such aspects as policies, public administration, national-level institutions, human resource and skill development, research capability, technology development, information systems, programme evaluation, intersectoral coordination and international cooperation.

(e) Funding of international and regional cooperation

11.40. The secretariat of the Conference has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $750 million, including about $530 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

Agenda 21 – Chapter 12
MANAGING FRAGILE ECOSYSTEMS: COMBATING DESERTIFICATION AND DROUGHT

12.1. Fragile ecosystems are important ecosystems, with unique features and resources. Fragile ecosystems include deserts, semi-arid lands, mountains, wetlands, small islands and certain coastal areas. Most of these ecosystems are regional in scope, as they transcend national boundaries. This chapter addresses land resource issues in deserts, as well as arid, semi-arid and dry sub-humid areas. Sustainable mountain development is addressed in chapter 13; small islands and coastal areas are discussed in chapter 17.

12.2. Desertification is land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities. Desertification affects about one sixth of the world's population, 70 per cent of all drylands, amounting to 3.6 billion hectares, and one quarter of the total land area of the world. The most obvious impact of desertification, in addition to widespread poverty, is the degradation of 3.3 billion hectares of the total area of rangeland, constituting 73 per cent of the rangeland with a low potential for human and animal carrying capacity; decline in soil fertility and soil structure on about 47 per cent of the dryland areas constituting marginal rainfed cropland; and the degradation of irrigated cropland, amounting to 30 per cent of the dryland areas with a high population density and agricultural potential.

12.3. The priority in combating desertification should be the implementation of preventive measures for lands that are not yet degraded, or which are only slightly degraded. However, the severely degraded areas should not be neglected. In combating desertification and drought, the participation of local communities, rural organizations, national Governments, non-governmental organizations and international and regional organizations is essential.

12.4. The following programme areas are included in this chapter:

a. Strengthening the knowledge base and developing information and monitoring systems for regions prone to desertification and drought, including the economic and social aspects of these ecosystems;

b. Combating land degradation through, inter alia, intensified soil conservation, afforestation and reforestation activities;

c. Developing and strengthening integrated development programmes for the eradication of poverty and promotion of alternative livelihood systems in areas prone to desertification;

d. Developing comprehensive anti-desertification programmes and integrating them into national development plans and national environmental planning;

e. Developing comprehensive drought preparedness and drought-relief schemes, including self-help arrangements, for drought-prone areas and designing programmes to cope with environmental refugees;

f. Encouraging and promoting popular participation and environmental education, focusing on desertification control and management of the effects of drought.

PROGRAMME AREAS

A. Strengthening the knowledge base and developing information and monitoring systems for regions prone to desertification and drought, including the economic and social aspects of these ecosystems

Basis for action

12.5. The global assessments of the status and rate of desertification conducted by the United Nations Environment Programme (UNEP) in 1977, 1984 and 1991 have revealed insufficient basic knowledge of desertification processes. Adequate world-wide systematic observation systems are helpful for the development and implementation of effective anti-desertification programmes. The capacity of existing international, regional and national institutions, particularly in developing countries, to generate and exchange relevant information is limited. An integrated and coordinated information and systematic observation system based on appropriate technology and embracing global, regional, national and local levels is essential for understanding the dynamics of desertification and drought processes. It is also important for developing adequate measures to deal with desertification and drought and improving socio-economic conditions.

Objectives

12.6. The objectives of this programme area are:

a. To promote the establishment and/or strengthening of national environmental information coordination centres that will act as focal points within Governments for sectoral ministries and provide the necessary standardization and back-up services; to ensure also that national environmental information systems on desertification and drought are linked together through a network at subregional, regional and interregional levels;

b. To strengthen regional and global systematic observation networks linked to the development of national systems for the observation of land degradation and desertification caused both by climate fluctuations and by human impact, and to identify priority areas for action;

c. To establish a permanent system at both national and international levels for monitoring desertification and land degradation with the aim of improving living conditions in the affected areas.

Activities

(a) Management-related activities

12.7. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Establish and/or strengthen environmental information systems at the national level;

b. Strengthen national, state/provincial and local assessment and ensure cooperation/networking between existing environmental information and monitoring systems, such as Earthwatch and the Sahara and Sahel Observatory;

c. Strengthen the capacity of national institutions to analyse environmental data so that ecological change can be monitored and environmental information obtained on a continuing basis at the national level.

(b) Data and information

12.8. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Review and study the means for measuring the ecological, economic and social consequences of desertification and land degradation and introduce the results of these studies internationally into desertification and land degradation assessment practices;

b. Review and study the interactions between the socio-economic impacts of climate, drought and desertification and utilize the results of these studies to secure concrete action.

12.9. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Support the integrated data collection and research work of programmes related to desertification and drought problems;

b. Support national, regional and global programmes for integrated data collection and research networks carrying out assessment of soil and land degradation;

c. Strengthen national and regional meteorological and hydrological networks and monitoring systems to ensure adequate collection of basic information and communication among national, regional and international centres.

(c) International and regional cooperation and coordination

12.10. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Strengthen regional programmes and international cooperation, such as the Permanent Inter-State Committee on Drought Control in the Sahel (CILSS), the Intergovernmental Authority for Drought and Development (IGADD), the Southern African Development Coordination Conference (SADCC), the Arab Maghreb Union and other regional organizations, as well as such organizations as the Sahara and Sahel Observatory;

b. Establish and/or develop a comprehensive desertification, land degradation and human condition database component that incorporates both physical and socio-economic parameters. This should be based on existing and, where necessary, additional facilities, such as those of Earthwatch and other information systems of international, regional and national institutions strengthened for this purpose;

c. Determine benchmarks and define indicators of progress that facilitate the work of local and regional organizations in tracking progress in the fight for anti-desertification. Particular attention should be paid to indicators of local participation.

Means of implementation

(a) Financing and cost evaluation

12.11. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $350 million, including about $175 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

12.12. Governments at the appropriate level, with the support of the relevant international and regional organizations working on the issue of desertification and drought, should:

a. Undertake and update existing inventories of natural resources, such as energy, water, soil, minerals, plant and animal access to food, as well as other resources, such as housing, employment, health, education and demographic distribution in time and space;

b. Develop integrated information systems for environmental monitoring, accounting and impact assessment;

c. International bodies should cooperate with national Governments to facilitate the acquisition and development of appropriate technology for monitoring and combating drought and desertification.

(c) Human resource development

12.13. Governments at the appropriate level, with the support of the relevant international and regional organizations working on the issue of desertification and drought, should develop the technical and professional skills of people engaged in monitoring and assessing the issue of desertification and drought.

(d) Capacity-building

12.14. Governments at the appropriate level, with the support of the relevant international and regional organizations working on the issue of desertification and drought, should:

a. Strengthen national and local institutions by providing adequate staff equipment and finance for assessing desertification;

b. Promote the involvement of the local population, particularly women and youth, in the collection and utilization of environmental information through education and awareness-building.

B. Combating land degradation through, inter alia, intensified soil conservation, afforestation and reforestation activities

Basis for action

12.15. Desertification affects about 3.6 billion hectares, which is about 70 per cent of the total area of the world's drylands or nearly one quarter of the global land area. In combating desertification on rangeland, rainfed cropland and irrigated land, preventative measures should be launched in areas which are not yet affected or are only slightly affected by desertification; corrective measures should be implemented to sustain the productivity of moderately desertified land; and rehabilitative measures should be taken to recover severely or very severely desertified drylands.

12.16. An increasing vegetation cover would promote and stabilize the hydrological balance in the dryland areas and maintain land quality and land productivity. Prevention of not yet degraded land and application of corrective measures and rehabilitation of moderate and severely degraded drylands, including areas affected by sand dune movements, through the introduction of environmentally sound, socially acceptable, fair and economically feasible land-use systems. This will enhance the land carrying capacity and maintenance of biotic resources in fragile ecosystems.

Objectives

12.17. The objectives of this programme area are:

a. As regards areas not yet affected or only slightly affected by desertification, to ensure appropriate management of existing natural formations (including forests) for the conservation of biodiversity, watershed protection, sustainability of their production and agricultural development, and other purposes, with the full participation of indigenous people;

b. To rehabilitate moderately to severely desertified drylands for productive utilization and sustain their productivity for agropastoral/agroforestry development through, inter alia, soil and water conservation;

c. To increase the vegetation cover and support management of biotic resources in regions affected or prone to desertification and drought, notably through such activities as afforestation/reforestation, agroforestry, community forestry and vegetation retention schemes;

d. To improve management of forest resources, including woodfuel, and to reduce woodfuel consumption through more efficient utilization, conservation and the enhancement, development and use of other sources of energy, including alternative sources of energy.

Activities

(a) Management-related activities

12.18. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should:

a. Implement urgent direct preventive measures in drylands that are vulnerable but not yet affected, or only slightly desertified drylands, by introducing (i) improved land-use policies and practices for more sustainable land productivity; (ii) appropriate, environmentally sound and economically feasible agricultural and pastoral technologies; and (iii) improved management of soil and water resources;

b. Carry out accelerated afforestation and reforestation programmes, using drought-resistant, fast-growing species, in particular native ones, including legumes and other species, combined with community-based agroforestry schemes. In this regard, creation of large-scale reforestation and afforestation schemes, particularly through the establishment of green belts, should be considered, bearing in mind the multiple benefits of such measures;

c. Implement urgent direct corrective measures in moderately to severely desertified drylands, in addition to the measures listed in paragraph 19 (a) above, with a view to restoring and sustaining their productivity;

d. Promote improved land/water/crop-management systems, making it possible to combat salinization in existing irrigated croplands; and to stabilize rainfed croplands and introduce improved soil/crop-management systems into land-use practice;

e. Promote participatory management of natural resources, including rangeland, to meet both the needs of rural populations and conservation purposes, based on innovative or adapted indigenous technologies;

f. Promote in situ protection and conservation of special ecological areas through legislation and other means for the purpose of combating desertification while ensuring the protection of biodiversity;

g. Promote and encourage investment in forestry development in drylands through various incentives, including legislative measures;

h. Promote the development and use of sources of energy which will lessen pressure on ligneous resources, including alternative sources of energy and improved stoves.

(b) Data and information

12.19. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Develop land-use models based on local practices for the improvement of such practices, with a focus on preventing land degradation. The models should give a better understanding of the variety of natural and human-induced factors that may contribute to desertification. Models should incorporate the interaction of both new and traditional practices to prevent land degradation and reflect the resilience of the whole ecological and social system;

b. Develop, test and introduce, with due regard to environmental security considerations, drought resistant, fast-growing and productive plant species appropriate to the environment of the regions concerned.

(c) International and regional cooperation and coordination

12.20. The appropriate United Nations agencies, international and regional organizations, non-governmental organizations and bilateral agencies should:

a. Coordinate their roles in combating land degradation and promoting reforestation, agroforestry and land-management systems in affected countries;

b. Support regional and subregional activities in technology development and dissemination, training and programme implementation to arrest dryland degradation.

12.21. The national Governments concerned, the appropriate United Nations agencies and bilateral agencies should strengthen the coordinating role in dryland degradation of subregional intergovernmental organizations set up to cover these activities, such as CILSS, IGADD, SADCC and the Arab Maghreb Union.

Means of implementation

(a) Financing and cost evaluation

12.22. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $6 billion, including about $3 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

12.23. Governments at the appropriate level and local communities, with the support of the relevant international and regional organizations, should:

a. Integrate indigenous knowledge related to forests, forest lands, rangeland and natural vegetation into research activities on desertification and drought;

b. Promote integrated research programmes on the protection, restoration and conservation of water and land resources and land-use management based on traditional approaches, where feasible.

(c) Human resource development

12.24. Governments at the appropriate level and local communities, with the support of the relevant international and regional organizations, should:

a. Establish mechanisms to ensure that land users, particularly women, are the main actors in implementing improved land use, including agroforestry systems, in combating land degradation;

b. Promote efficient extension-service facilities in areas prone to desertification and drought, particularly for training farmers and pastoralists in the improved management of land and water resources in drylands.

(d) Capacity-building

12.25. Governments at the appropriate level and local communities, with the support of the relevant international and regional organizations, should:

a. Develop and adopt, through appropriate national legislation, and introduce institutionally, new and environmentally sound development-oriented land-use policies;

b. Support community-based people's organizations, especially farmers and pastoralists.

C. Developing and strengthening integrated development programmes for the eradication of poverty and promotion of alternative livelihood systems in areas prone to desertification

Basis for action

12.26. In areas prone to desertification and drought, current livelihood and resource-use systems are not able to maintain living standards. In most of the arid and semi-arid areas, the traditional livelihood systems based on agropastoral systems are often inadequate and unsustainable, particularly in view of the effects of drought and increasing demographic pressure. Poverty is a major factor in accelerating the rate of degradation and desertification. Action is therefore needed to rehabilitate and improve the agropastoral systems for sustainable management of rangelands, as well as alternative livelihood systems.

Objectives

12.27. The objectives of this programme area are:

a. To create the capacity of village communities and pastoral groups to take charge of their development and the management of their land resources on a socially equitable and ecologically sound basis;

b. To improve production systems in order to achieve greater productivity within approved programmes for conservation of national resources and in the framework of an integrated approach to rural development;

c. To provide opportunities for alternative livelihoods as a basis for reducing pressure on land resources while at the same time providing additional sources of income, particularly for rural populations, thereby improving their standard of living.

Activities

(a) Management-related activities

12.28. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Adopt policies at the national level regarding a decentralized approach to land-resource management, delegating responsibility to rural organizations;

b. Create or strengthen rural organizations in charge of village and pastoral land management;

c. Establish and develop local, national and intersectoral mechanisms to handle environmental and developmental consequences of land tenure expressed in terms of land use and land ownership. Particular attention should be given to protecting the property rights of women and pastoral and nomadic groups living in rural areas;

d. Create or strengthen village associations focused on economic activities of common pastoral interest (market gardening, transformation of agricultural products, livestock, herding, etc.);

e. Promote rural credit and mobilization of rural savings through the establishment of rural banking systems;

f. Develop infrastructure, as well as local production and marketing capacity, by involving the local people to promote alternative livelihood systems and alleviate poverty;

g. Establish a revolving fund for credit to rural entrepreneurs and local groups to facilitate the establishment of cottage industries/business ventures and credit for input to agropastoral activities.

(b) Data and information

12.29. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Conduct socio-economic baseline studies in order to have a good understanding of the situation in the programme area regarding, particularly, resource and land tenure issues, traditional land-management practices and characteristics of production systems;

b. Conduct inventory of natural resources (soil, water and vegetation) and their state of degradation, based primarily on the knowledge of the local population (e.g., rapid rural appraisal);

c. Disseminate information on technical packages adapted to the social, economic and ecological conditions of each;

d. Promote exchange and sharing of information concerning the development of alternative livelihoods with other agro-ecological regions.

(c) International and regional cooperation and coordination

12.30. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should:

a. Promote cooperation and exchange of information among the arid and semi-arid land research institutions concerning techniques and technologies to improve land and labour productivity, as well as viable production systems;

b. Coordinate and harmonize the implementation of programmes and projects funded by the international organization communities and non-governmental organizations that are directed towards the alleviation of poverty and promotion of an alternative livelihood system.

Means of implementation

(a) Financing and cost evaluation

12.31. The Conference secretariat has estimated the costs for this programme area in chapter 3 (Combating poverty) and chapter 14 (Promoting sustainable agriculture and rural development).

(b) Scientific and technological means

12.32. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should:

a. Undertake applied research in land use with the support of local research institutions;

b. Facilitate regular national, regional and interregional communication on and exchange of information and experience between extension officers and researchers;

c. Support and encourage the introduction and use of technologies for the generation of alternative sources of incomes.

(c) Human resource development

12.33. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Train members of rural organizations in management skills and train agropastoralists in such special techniques as soil and water conservation, water harvesting, agroforestry and small-scale irrigation;

b. Train extension agents and officers in the participatory approach to integrated land management.

(d) Capacity-building

12.34. Governments at the appropriate level, with the support of the relevant international and regional organizations, should establish and maintain mechanisms to ensure the integration into sectoral and national development plans and programmes of strategies for poverty alleviation among the inhabitants of lands prone to desertification.

D. Developing comprehensive anti-desertification programmes and integrating them into national development plans and national environmental planning

Basis for action

12.35. In a number of developing countries affected by desertification, the natural resource base is the main resource upon which the development process must rely. The social systems interacting with land resources make the problem much more complex, requiring an integrated approach to the planning and management of land resources. Action plans to combat desertification and drought should include management aspects of the environment and development, thus conforming with the approach of integrating national development plans and national environmental action plans.

Objectives

12.36. The objectives of this programme area are:

a. To strengthen national institutional capabilities to develop appropriate anti-desertification programmes and to integrate them into national development planning;

b. To develop and integrate strategic planning frameworks for the development, protection and management of natural resources in dryland areas into national development plans, including national plans to combat desertification, and environmental action plans in countries most prone to desertification;

c. To initiate a long-term process for implementing and monitoring strategies related to natural resources management;

d. To strengthen regional and international cooperation for combating desertification through, inter alia, the adoption of legal and other instruments.

Activities

(a) Management-related activities

12.37. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should:

a. Establish or strengthen, national and local anti-desertification authorities within government and local executive bodies, as well as local committees/associations of land users, in all rural communities affected, with a view to organizing working cooperation between all actors concerned, from the grass-roots level (farmers and pastoralists) to the higher levels of government;

b. Develop national plans of action to combat desertification and as appropriate, make them integral parts of national development plans and national environmental action plans;

c. Implement policies directed towards improving land use, managing common lands appropriately, providing incentives to small farmers and pastoralists, involving women and encouraging private investment in the development of drylands;

d. Ensure coordination among ministries and institutions working on anti-desertification programmes at national and local levels.

(b) Data and information

12.38. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should promote information exchange and cooperation with respect to national planning and programming among affected countries, inter alia, through networking.

(c) International and regional cooperation and coordination

12.39. The relevant international organizations, multilateral financial institutions, non-governmental organizations and bilateral agencies should strengthen their cooperation in assisting with the preparation of desertification control programmes and their integration into national planning strategies, with the establishment of national coordinating and systematic observation mechanisms and with the regional and global networking of these plans and mechanisms.

12.40. The General Assembly, at its forty-seventh session, should be requested to establish, under the aegis of the General Assembly, an intergovernmental negotiating committee for the elaboration of an international convention to combat desertification in in those countries experiencing serious drought and/or desertification, particularly in Africa, with a view to finalizing such a convention by June 1994.

Means of implementation

(a) Financing and cost evaluation

12.41. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $180 million, including about $90 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

12.42. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Develop and introduce appropriate improved sustainable agricultural and pastoral technologies that are socially and environmentally acceptable and economically feasible;

b. Undertake applied study on the integration of environmental and developmental activities into national development plans.

(c) Human resource development

12.43. Governments at the appropriate level, with the support of the relevant international and regional organizations, should undertake nationwide major anti-desertification awareness/training campaigns within countries affected through existing national mass media facilities, educational networks and newly created or strengthened extension services. This should ensure people's access to knowledge of desertification and drought and to national plans of action to combat desertification.

(d) Capacity-building

12.44. Governments at the appropriate level, with the support of the relevant international and regional organizations, should establish and maintain mechanisms to ensure coordination of sectoral ministries and institutions, including local-level institutions and appropriate non-governmental organizations, in integrating anti-desertification programmes into national development plans and national environmental action plans.

E. Developing comprehensive drought preparedness and drought-relief schemes, including self-help arrangements, for drought-prone areas and designing programmes to cope with environmental refugees

Basis for action

12.45. Drought, in differing degrees of frequency and severity, is a recurring phenomenon throughout much of the developing world, especially Africa. Apart from the human toll - an estimated 3 million people died in the mid-1980s because of drought in sub-Saharan Africa - the economic costs of drought-related disasters are also high in terms of lost production, misused inputs and diversion of development resources.

12.46. Early-warning systems to forecast drought will make possible the implementation of drought-preparedness schemes. Integrated packages at the farm and watershed level, such as alternative cropping strategies, soil and water conservation and promotion of water harvesting techniques, could enhance the capacity of land to cope with drought and provide basic necessities, thereby minimizing the number of environmental refugees and the need for emergency drought relief. At the same time, contingency arrangements for relief are needed for periods of acute scarcity.

Objectives

12.47. The objectives of this programme area are:

a. To develop national strategies for drought preparedness in both the short and long term, aimed at reducing the vulnerability of production systems to drought;

b. To strengthen the flow of early-warning information to decision makers and land users to enable nations to implement strategies for drought intervention;

c. To develop and integrate drought-relief schemes and means of coping with environmental refugees into national and regional development planning.

Activities

(a) Management-related activities

12.48. In drought-prone areas, Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Design strategies to deal with national food deficiencies in periods of production shortfall. These strategies should deal with issues of storage and stocks, imports, port facilities, food storage, transport and distribution;

b. Improve national and regional capacity for agrometeorology and contingency crop planning. Agrometeorology links the frequency, content and regional coverage of weather forecasts with the requirements of crop planning and agricultural extension;

c. Prepare rural projects for providing short-term rural employment to drought-affected households. The loss of income and entitlement to food is a common source of distress in times of drought. Rural works help to generate the income required to buy food for poor households;

d. Establish contingency arrangements, where necessary, for food and fodder distribution and water supply;

e. Establish budgetary mechanisms for providing, at short notice, resources for drought relief;

f. Establish safety nets for the most vulnerable households.

(b) Data and information

12.49. Governments of affected countries, at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Implement research on seasonal forecasts to improve contingency planning and relief operations and allow preventive measures to be taken at the farm level, such as the selection of appropriate varieties and farming practices, in times of drought;

b. Support applied research on ways of reducing water loss from soils, on ways of increasing the water absorption capacities of soils and on water harvesting techniques in drought-prone areas;

c. Strengthen national early-warning systems, with particular emphasis on the area of risk-mapping, remote-sensing, agrometeorological modelling, integrated multidisciplinary crop-forecasting techniques and computerized food supply/demand analysis.

(c) International and regional cooperation and coordination

12.50. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Establish a system of stand-by capacities in terms of foodstock, logistical support, personnel and finance for a speedy international response to drought-related emergencies;

b. Support programmes of the World Meteorological Organization (WMO) on agrohydrology and agrometeorology, the Programme of the Regional Training Centre for Agrometeorology and Operational Hydrology and their Applications (AGRHYMET), drought-monitoring centres and the African Centre of Meteorological Applications for Development (ACMAD), as well as the efforts of the Permanent Inter-State Committee on Drought Control in the Sahel (CILSS) and the Intergovernmental Authority for Drought and Development (IGADD);

c. Support FAO programmes and other programmes for the development of national early-warning systems and food security assistance schemes;

d. Strengthen and expand the scope of existing regional programmes and the activities of appropriate United Nations organs and organizations, such as the World Food Programme (WFP), the Office of the United Nations Disaster Relief Coordinator (UNDRO) and the United Nations Sudano-Sahelian Office as well as of non-governmental organizations, aimed at mitigating the effects of drought and emergencies.

Means of implementation

(a) Financing and cost evaluation

12.51. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.2 billion, including about $1.1 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

12.52. Governments at the appropriate level and drought-prone communities, with the support of the relevant international and regional organizations, should:

a. Use traditional mechanisms to cope with hunger as a means of channelling relief and development assistance;

b. Strengthen and develop national, regional and local interdisciplinary research and training capabilities for drought-prevention strategies.

(c) Human resource development

12.53. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Promote the training of decision makers and land users in the effective utilization of information from early-warning systems;

b. Strengthen research and national training capabilities to assess the impact of drought and to develop methodologies to forecast drought.

(d) Capacity-building

12.54. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Improve and maintain mechanisms with adequate staff, equipment and finances for monitoring drought parameters to take preventive measures at regional, national and local levels;

b. Establish interministerial linkages and coordinating units for drought monitoring, impact assessment and management of drought-relief schemes.

F. Encouraging and promoting popular participation and environmental education, focusing on desertification control and management of the effects of drought

Basis for action

12.55. The experience to date on the successes and failures of programmes and projects points to the need for popular support to sustain activities related to desertification and drought control. But it is necessary to go beyond the theoretical ideal of popular participation and to focus on obtaining actual active popular involvement, rooted in the concept of partnership. This implies the sharing of responsibilities and the mutual involvement of all parties. In this context, this programme area should be considered an essential supporting component of all desertification-control and drought-related activities.

Objectives

12.56. The objectives of this programme area are:

a. To develop and increase public awareness and knowledge concerning desertification and drought, including the integration of environmental education in the curriculum of primary and secondary schools;

b. To establish and promote true partnership between government authorities, at both the national and local levels, other executing agencies, non-governmental organizations and land users stricken by drought and desertification, giving land users a responsible role in the planning and execution processes in order to benefit fully from development projects;

c. To ensure that the partners understand one another's needs, objectives and points of view by providing a variety of means such as training, public awareness and open dialogue;

d. To support local communities in their own efforts in combating desertification, and to draw on the knowledge and experience of the populations concerned, ensuring the full participation of women and indigenous populations.

Activities

(a) Management-related activities

12.57. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Adopt policies and establish administrative structures for more decentralized decision-making and implementation;

b. Establish and utilize mechanisms for the consultation and involvement of land users and for enhancing capability at the grass-roots level to identify and/or contribute to the identification and planning of action;

c. Define specific programme/project objectives in cooperation with local communities; design local management plans to include such measures of progress, thereby providing a means of altering project design or changing management practices, as appropriate;

d. Introduce legislative, institutional/organizational and financial measures to secure user involvement and access to land resources;

e. Establish and/or expand favourable conditions for the provision of services, such as credit facilities and marketing outlets for rural populations;

f. Develop training programmes to increase the level of education and participation of people, particularly women and indigenous groups, through, inter alia, literacy and the development of technical skills;

g. Create rural banking systems to facilitate access to credit for rural populations, particularly women and indigenous groups, and to promote rural savings;

h. Adopt appropriate policies to stimulate private and public investment.

(b) Data and information

12.58. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Review, develop and disseminate gender-disaggregated information, skills and know-how at all levels on ways of organizing and promoting popular participation;

b. Accelerate the development of technological know-how, focusing on appropriate and intermediate technology;

c. Disseminate knowledge about applied research results on soil and water issues, appropriate species, agricultural techniques and technological know-how.

(c) International and regional cooperation and coordination

12.59. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should:

a. Develop programmes of support to regional organizations such as CILSS, IGADD, SADCC and the Arab Maghreb Union and other intergovernmental organizations in Africa and other parts of the world, to strengthen outreach programmes and increase the participation of non-governmental organizations together with rural populations;

b. Develop mechanisms for facilitating cooperation in technology and promote such cooperation as an element of all external assistance and activities related to technical assistance projects in the public or private sector;

c. Promote collaboration among different actors in environment and development programmes;

d. Encourage the emergence of representative organizational structures to foster and sustain interorganizational cooperation.

Means of implementation

(a) Financing and cost evaluation

12.60. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.0 billion, including about $500 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

12.61. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should promote the development of indigenous know-how and technology transfer.

(c) Human resource development

12.62. Governments, at the appropriate level, and with the support of the relevant international and regional organizations, should:

a. Support and/or strengthen institutions involved in public education, including the local media, schools and community groups;

b. Increase the level of public education.

(d) Capacity-building

12.63. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should promote members of local rural organizations and train and appoint more extension officers working at the local level.

Agenda 21 – Chapter 13
MANAGING FRAGILE ECOSYSTEMS: SUSTAINABLE MOUNTAIN DEVELOPMENT

13.1. Mountains are an important source of water, energy and biological diversity. Furthermore, they are a source of such key resources as minerals, forest products and agricultural products and of recreation. As a major ecosystem representing the complex and interrelated ecology of our planet, mountain environments are essential to the survival of the global ecosystem. Mountain ecosystems are, however, rapidly changing. They are susceptible to accelerated soil erosion, landslides and rapid loss of habitat and genetic diversity. On the human side, there is widespread poverty among mountain inhabitants and loss of indigenous knowledge. As a result, most global mountain areas are experiencing environmental degradation. Hence, the proper management of mountain resources and socio-economic development of the people deserves immediate action.

13.2. About 10 per cent of the world's population depends on mountain resources. A much larger percentage draws on other mountain resources, including and especially water. Mountains are a storehouse of biological diversity and endangered species.

13.3. Two programme areas are included in this chapter to further elaborate the problem of fragile ecosystems with regard to all mountains of the world. These are:

a. Generating and strengthening knowledge about the ecology and sustainable development of mountain ecosystems;

b. Promoting integrated watershed development and alternative livelihood opportunities.

PROGRAMME AREAS

A. Generating and strengthening knowledge about the ecology and sustainable development of mountain ecosystems

Basis for action

13.4. Mountains are highly vulnerable to human and natural ecological imbalance. Mountains are the areas most sensitive to all climatic changes in the atmosphere. Specific information on ecology, natural resource potential and socio-economic activities is essential. Mountain and hillside areas hold a rich variety of ecological systems. Because of their vertical dimensions, mountains create gradients of temperature, precipitation and insolation. A given mountain slope may include several climatic systems - such as tropical, subtropical, temperate and alpine - each of which represents a microcosm of a larger habitat diversity. There is, however, a lack of knowledge of mountain ecosystems. The creation of a global mountain database is therefore vital for launching programmes that contribute to the sustainable development of mountain ecosystems.

Objectives

13.5. The objectives of this programme area are:

a. To undertake a survey of the different forms of soils, forest, water use, crop, plant and animal resources of mountain ecosystems, taking into account the work of existing international and regional organizations;

b. To maintain and generate database and information systems to facilitate the integrated management and environmental assessment of mountain ecosystems, taking into account the work of existing international and regional organizations;

c. To improve and build the existing land/water ecological knowledge base regarding technologies and agricultural and conservation practices in the mountain regions of the world, with the participation of local communities;

d. To create and strengthen the communications network and information clearing-house for existing organizations concerned with mountain issues;

e. To improve coordination of regional efforts to protect fragile mountain ecosystems through the consideration of appropriate mechanisms, including regional legal and other instruments;

f. To generate information to establish databases and information systems to facilitate an evaluation of environmental risks and natural disasters in mountain ecosystems.

Activities

(a) Management-related activities

13.6. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Strengthen existing institutions or establish new ones at local, national and regional levels to generate a multidisciplinary land/water ecological knowledge base on mountain ecosystems;

b. Promote national policies that would provide incentives to local people for the use and transfer of environment-friendly technologies and farming and conservation practices;

c. Build up the knowledge base and understanding by creating mechanisms for cooperation and information exchange among national and regional institutions working on fragile ecosystems;

d. Encourage policies that would provide incentives to farmers and local people to undertake conservation and regenerative measures;

e. Diversify mountain economies, inter alia, by creating and/or strengthening tourism, in accordance with integrated management of mountain areas;

f. Integrate all forest, rangeland and wildlife activities in such a way that specific mountain ecosystems are maintained;

g. Establish appropriate natural reserves in representative species-rich sites and areas.

(b) Data and information

13.7. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Maintain and establish meteorological, hydrological and physical monitoring analysis and capabilities that would encompass the climatic diversity as well as water distribution of various mountain regions of the world;

b. Build an inventory of different forms of soils, forests, water use, and crop, plant and animal genetic resources, giving priority to those under threat of extinction. Genetic resources should be protected in situ by maintaining and establishing protected areas and improving traditional farming and animal husbandry activities and establishing programmes for evaluating the potential value of the resources;

c. Identify hazardous areas that are most vulnerable to erosion, floods, landslides, earthquakes, snow avalanches and other natural hazards;

d. Identify mountain areas threatened by air pollution from neighbouring industrial and urban areas.

(c) International and regional cooperation

13.8. National Governments and intergovernmental organizations should:

a. Coordinate regional and international cooperation and facilitate an exchange of information and experience among the specialized agencies, the World Bank, IFAD and other international and regional organizations, national Governments, research institutions and non-governmental organizations working on mountain development;

b. Encourage regional, national and international networking of people's initiatives and the activities of international, regional and local non-governmental organizations working on mountain development, such as the United Nations University (UNU), the Woodland Mountain Institutes (WMI), the International Center for Integrated Mountain Development (ICIMOD), the International Mountain Society (IMS), the African Mountain Association and the Andean Mountain Association, besides supporting those organizations in exchange of information and experience;

c. Protect Fragile Mountain Ecosystem through the consideration of appropriate mechanisms including regional legal and other instruments.

Means of implementation

(a) Financing and cost evaluation

13.9. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $50 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means 13.10. Governments at the appropriate level, with the support of the relevant international and regional organizations, should strengthen scientific research and technological development programmes, including diffusion through national and regional institutions, particularly in meteorology, hydrology, forestry, soil sciences and plant sciences.

(c) Human resource development

13.10. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should:

a. Launch training and extension programmes in environmentally appropriate technologies and practices that would be suitable to mountain ecosystems;

b. Support higher education through fellowships and research grants for environmental studies in mountains and hill areas, particularly for candidates from indigenous mountain populations;

c. Undertake environmental education for farmers, in particular for women, to help the rural population better understand the ecological issues regarding the sustainable development of mountain ecosystems.

(d) Capacity-building

13.11. Governments at the appropriate level, with the support of the relevant international and regional organizations, should build up national and regional institutional bases that could carry out research, training and dissemination of information on the sustainable development of the economies of fragile ecosystems.

B. Promoting integrated watershed development and alternative livelihood opportunities

Basis for action

13.13. Nearly half of the world's population is affected in various ways by mountain ecology and the degradation of watershed areas. About 10 per cent of the Earth's population lives in mountain areas with higher slopes, while about 40 per cent occupies the adjacent medium- and lower-watershed areas. There are serious problems of ecological deterioration in these watershed areas. For example, in the hillside areas of the Andean countries of South America a large portion of the farming population is now faced with a rapid deterioration of land resources. Similarly, the mountain and upland areas of the Himalayas, South-East Asia and East and Central Africa, which make vital contributions to agricultural production, are threatened by cultivation of marginal lands due to expanding population. In many areas this is accompanied by excessive livestock grazing, deforestation and loss of biomass cover.

13.14. Soil erosion can have a devastating impact on the vast numbers of rural people who depend on rainfed agriculture in the mountain and hillside areas. Poverty, unemployment, poor health and bad sanitation are widespread. Promoting integrated watershed development programmes through effective participation of local people is a key to preventing further ecological imbalance. An integrated approach is needed for conserving, upgrading and using the natural resource base of land, water, plant, animal and human resources. In addition, promoting alternative livelihood opportunities, particularly through development of employment schemes that increase the productive base, will have a significant role in improving the standard of living among the large rural population living in mountain ecosystems.

Objectives

13.15. The objectives of this programme area are:

a. By the year 2000, to develop appropriate land-use planning and management for both arable and non-arable land in mountain-fed watershed areas to prevent soil erosion, increase biomass production and maintain the ecological balance;

b. To promote income-generating activities, such as sustainable tourism, fisheries and environmentally sound mining, and to improve infrastructure and social services, in particular to protect the livelihoods of local communities and indigenous people;

c. To develop technical and institutional arrangements for affected countries to mitigate the effects of natural disasters through hazard-prevention measures, risk zoning, early-warning systems, evacuation plans and emergency supplies.

Activities

(a) Management-related activities

13.16. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Undertake measures to prevent soil erosion and promote erosion-control activities in all sectors;

b. Establish task forces or watershed development committees, complementing existing institutions, to coordinate integrated services to support local initiatives in animal husbandry, forestry, horticulture and rural development at all administrative levels;

c. Enhance popular participation in the management of local resources through appropriate legislation;

d. Support non-governmental organizations and other private groups assisting local organizations and communities in the preparation of projects that would enhance participatory development of local people;

e. Provide mechanisms to preserve threatened areas that could protect wildlife, conserve biological diversity or serve as national parks;

f. Develop national policies that would provide incentives to farmers and local people to undertake conservation measures and to use environment-friendly technologies;

g. Undertake income-generating activities in cottage and agro-processing industries, such as the cultivation and processing of medicinal and aromatic plants;

h. Undertake the above activities, taking into account the need for full participation of women, including indigenous people and local communities, in development.

(b) Data and information

13.17. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Maintain and establish systematic observation and evaluation capacities at the national, state or provincial level to generate information for daily operations and to assess the environmental and socio-economic impacts of projects;

b. Generate data on alternative livelihoods and diversified production systems at the village level on annual and tree crops, livestock, poultry, beekeeping, fisheries, village industries, markets, transport and income-earning opportunities, taking fully into account the role of women and integrating them into the planning and implementation process.

(c) International and regional cooperation

13.18. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Strengthen the role of appropriate international research and training institutes such as the Consultative Group on International Agricultural Research Centers (CGIAR) and the International Board for Soil Research and Management (IBSRAM), as well as regional research centres, such as the Woodland Mountain Institutes and the International Center for Integrated Mountain Development, in undertaking applied research relevant to watershed development;

b. Promote regional cooperation and exchange of data and information among countries sharing the same mountain ranges and river basins, particularly those affected by mountain disasters and floods;

c. Maintain and establish partnerships with non-governmental organizations and other private groups working in watershed development.

Means of implementation

(a) Financial and cost evaluation

13.19. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $13 billion, including about $1.9 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

13.20. Financing for the promotion of alternative livelihoods in mountain ecosystems should be viewed as part of a country's anti-poverty or alternative livelihoods programme, which is also discussed in chapter 3 (Combating poverty) and chapter 14 (Promoting sustainable agriculture and rural development) of Agenda 21.

(b) Scientific and technical means

13.21. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

- Consider undertaking pilot projects that combine environmental protection and development functions with particular emphasis on some of the traditional environmental management practices or systems that have a good impact on the environment;

- Generate technologies for specific watershed and farm conditions through a participatory approach involving local men and women, researchers and extension agents who will carry out experiments and trials on farm conditions;

- Promote technologies of vegetative conservation measures for erosion prevention, in situ moisture management, improved cropping technology, fodder production and agroforestry that are low-cost, simple and easily adopted by local people.

(c) Human resource development

13.22. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Promote a multidisciplinary and cross-sectoral approach in training and the dissemination of knowledge to local people on a wide range of issues, such as household production systems, conservation and utilization of arable and non-arable land, treatment of drainage lines and recharging of groundwater, livestock management, fisheries, agroforestry and horticulture;

b. Develop human resources by providing access to education, health, energy and infrastructure;

c. Promote local awareness and preparedness for disaster prevention and mitigation, combined with the latest available technology for early warning and forecasting.

(d) Capacity-building

13.23. Governments at the appropriate level, with the support of the relevant international and regional organizations, should develop and strengthen national centres for watershed management to encourage a comprehensive approach to the environmental, socio-economic, technological, legislative, financial and administrative aspects and provide support to policy makers, administrators, field staff and farmers for watershed development.

13.24. The private sector and local communities, in cooperation with national Governments, should promote local infrastructure development, including communication networks, mini- or micro-hydro development to support cottage industries, and access to markets.

Agenda 21 – Chapter 14
PROMOTING SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT

14.1. By the year 2025, 83 per cent of the expected global population of 8.5 billion will be living in developing countries. Yet the capacity of available resources and technologies to satisfy the demands of this growing population for food and other agricultural commodities remains uncertain. Agriculture has to meet this challenge, mainly by increasing production on land already in use and by avoiding further encroachment on land that is only marginally suitable for cultivation.

14.2. Major adjustments are needed in agricultural, environmental and macroeconomic policy, at both national and international levels, in developed as well as developing countries, to create the conditions for sustainable agriculture and rural development (SARD). The major objective of SARD is to increase food production in a sustainable way and enhance food security. This will involve education initiatives, utilization of economic incentives and the development of appropriate and new technologies, thus ensuring stable supplies of nutritionally adequate food, access to those supplies by vulnerable groups, and production for markets; employment and income generation to alleviate poverty; and natural resource management and environmental protection.

14.3. The priority must be on maintaining and improving the capacity of the higher potential agricultural lands to support an expanding population. However, conserving and rehabilitating the natural resources on lower potential lands in order to maintain sustainable man/land ratios is also necessary. The main tools of SARD are policy and agrarian reform, participation, income diversification, land conservation and improved management of inputs. The success of SARD will depend largely on the support and participation of rural people, national Governments, the private sector and international cooperation, including technical and scientific cooperation.

14.4. The following programme areas are included in this chapter:

a. Agricultural policy review, planning and integrated programming in the light of the multifunctional aspect of agriculture, particularly with regard to food security and sustainable development;

b. Ensuring people's participation and promoting human resource development for sustainable agriculture;

c. Improving farm production and farming systems through diversification of farm and non-farm employment and infrastructure development;

d. Land-resource planning information and education for agriculture;

e. Land conservation and rehabilitation;

f. Water for sustainable food production and sustainable rural development;

g. Conservation and sustainable utilization of plant genetic resources for food and sustainable agriculture;

h. Conservation and sustainable utilization of animal genetic resources for sustainable agriculture;

i. Integrated pest management and control in agriculture;

j. Sustainable plant nutrition to increase food production;

k. Rural energy transition to enhance productivity;

l. Evaluation of the effects of ultraviolet radiation on plants and animals caused by the depletion of the stratospheric ozone layer.

PROGRAMME AREAS

A. Agricultural policy review, planning and integrated programmes in the light of the multifunctional aspect of agriculture, particularly with regard to food security and sustainable development

Basis for action

14.5. There is a need to integrate sustainable development considerations with agricultural policy analysis and planning in all countries, particularly in developing countries. Recommendations should contribute directly to development of realistic and operational medium- to long-term plans and programmes, and thus to concrete actions. Support to and monitoring of implementation should follow.

14.6. The absence of a coherent national policy framework for sustainable agriculture and rural development (SARD) is widespread and is not limited to the developing countries. In particular the economies in transition from planned to market-oriented systems need such a framework to incorporate environmental considerations into economic activities, including agriculture. All countries need to assess comprehensively the impacts of such policies on food and agriculture sector performance, food security, rural welfare and international trading relations as a means for identifying appropriate offsetting measures. The major thrust of food security in this case is to bring about a significant increase in agricultural production in a sustainable way and to achieve a substantial improvement in people's entitlement to adequate food and culturally appropriate food supplies.

14.7. Sound policy decisions pertaining to international trade and capital flows also necessitate action to overcome: (a) a lack of awareness of the environmental costs incurred by sectoral and macroeconomic policies and hence their threat to sustainability; (b) insufficient skills and experience in incorporating issues of sustainability into policies and programmes; and (c) inadequacy of tools of analysis and monitoring. 1/

Objectives

14.8. The objectives of this Programme area are:

a. By 1995, to review and, where appropriate, establish a programme to integrate environmental and sustainable development with policy analysis for the food and agriculture sector and relevant macroeconomic policy analysis, formulation and implementation;

b. To maintain and develop, as appropriate, operational multisectoral plans, programmes and policy measures, including programmes and measures to enhance sustainable food production and food security within the framework of sustainable development, not later than 1998;

c. To maintain and enhance the ability of developing countries, particularly the least developed ones, to themselves manage policy, programming and planning activities, not later than 2005.

Activities

(a) Management-related activities

14.9. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Carry out national policy reviews related to food security, including adequate levels and stability of food supply and access to food by all households;

b. Review national and regional agricultural policy in relation, inter alia, to foreign trade, price policy, exchange rate policies, agricultural subsidies and taxes, as well as organization for regional economic integration;

c. Implement policies to influence land tenure and property rights positively with due recognition of the minimum size of land-holding required to maintain production and check further fragmentation;

d. Consider demographic trends and population movements and identify critical areas for agricultural production;

e. Formulate, introduce and monitor policies, laws and regulations and incentives leading to sustainable agricultural and rural development and improved food security and to the development and transfer of appropriate farm technologies, including, where appropriate, low-input sustainable agricultural (LISA) systems;

f. Support national and regional early warning systems through food-security assistance schemes that monitor food supply and demand and factors affecting household access to food;

g. Review policies with respect to improving harvesting, storage, processing, distribution and marketing of products at the local, national and regional levels;

h. Formulate and implement integrated agricultural projects that include other natural resource activities, such as management of rangelands, forests, and wildlife, as appropriate;

i. Promote social and economic research and policies that encourage sustainable agriculture development, particularly in fragile ecosystems and densely populated areas;

j. Identify storage and distribution problems affecting food availability; support research, where necessary, to overcome these problems and cooperate with producers and distributors to implement improved practices and systems.

(b) Data and information

14.10. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Cooperate actively to expand and improve the information on early warning systems on food and agriculture at both regional and national levels;

b. Examine and undertake surveys and research to establish baseline information on the status of natural resources relating to food and agricultural production and planning in order to assess the impacts of various uses on these resources, and develop methodologies and tools of analysis, such as environmental accounting.

(c) International and regional cooperation and coordination

14.11. United Nations agencies, such as FAO, the World Bank, IFAD and GATT, and regional organizations, bilateral donor agencies and other bodies should, within their respective mandates, assume a role in working with national Governments in the following activities:

a. Implement integrated and sustainable agricultural development and food security strategies at the subregional level that use regional production and trade potentials, including organizations for regional economic integration, to promote food security;

b. Encourage, in the context of achieving sustainable agricultural development and consistent with relevant internationally agreed principles on trade and environment, a more open and non-discriminatory trading system and the avoidance of unjustifiable trade barriers which together with other policies will facilitate the further integration of agricultural and environmental policies so as to make them mutually supportive;

c. Strengthen and establish national, regional and international systems and networks to increase the understanding of the interaction between agriculture and the state of the environment, identify ecologically sound technologies and facilitate the exchange information on data sources, policies, and techniques and tools of analysis.

Means of implementation

(a) Financing and cost evaluation

14.12. The Conference secretariat has estimated the average total annual cost (1993-2000) on implementing the activities of this programme to be about $3 billion, including about $450 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.13. Governments at the appropriate level and with the support of the relevant international and regional organizations should assist farming households and communities to apply technologies related to improved food production and security, including storage, monitoring of production and distribution.

(c) Human resource development

14.14. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Involve and train local economists, planners and analysts to initiate national and international policy reviews and develop frameworks for sustainable agriculture;

b. Establish legal measures to promote access of women to land and remove biases in their involvement in rural development.

(d) Capacity-building

14.15. Governments at the appropriate level, with the support of the relevant international and regional organizations, should strengthen ministries for agriculture, natural resources and planning.

B. Ensuring people's participation and promoting human resource development for sustainable agriculture

Basis for action

14.16. This component bridges policy and integrated resource management. The greater the degree of community control over the resources on which it relies, the greater will be the incentive for economic and human resources development. At the same time, policy instruments to reconcile long-run and short-run requirements must be set by national Governments. The approaches focus on fostering self-reliance and cooperation, providing information and supporting user-based organizations. Emphasis should be on management practices, building agreements for changes in resource utilization, the rights and duties associated with use of land, water and forests, the functioning of markets, prices, and the access to information, capital and inputs. This would require training and capacity-building to assume greater responsibilities in sustainable development efforts. 2/

Objectives

14.17. The objectives of this programme area are:

a. To promote greater public awareness of the role of people's participation and people's organizations, especially women's groups, youth, indigenous people, local communities and small farmers, in sustainable agriculture and rural development;

b. To ensure equitable access of rural people, particularly women, small farmers, landless and indigenous people, to land, water and forest resources and to technologies, financing, marketing, processing and distribution;

c. To strengthen and develop the management and the internal capacities of rural people's organizations and extension services and to decentralize decision-making to the lowest community level.

Activities

(a) Management-related activities

14.18. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Develop and improve integrated agricultural extension services and facilities and rural organizations and undertake natural resource management and food security activities, taking into account the different needs of subsistence agriculture as well as market-oriented crops;

b. Review and refocus existing measures to achieve wider access to land, water and forest resources and ensure equal rights of women and other disadvantaged groups, with particular emphasis on rural populations, indigenous people and local communities;

c. Assign clear titles, rights and responsibilities for land and for individuals or communities to encourage investment in land resources;

d. Develop guidelines for decentralization policies for rural development through reorganization and strengthening of rural institutions;

e. Develop policies in extension, training, pricing, input distribution, credit and taxation to ensure necessary incentives and equitable access by the poor to production-support services;

f. Provide support services and training, recognizing the variation in agricultural circumstances and practices by location; the optimal use of on-farm inputs and the minimal use of external inputs; optimal use of local natural resources and management of renewable energy sources; and the establishment of networks that deal with the exchange of information on alternative forms of agriculture.

(b) Data and information

14.19. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should collect, analyse, and disseminate information on human resources, the role of Governments, local communities and non-governmental organizations in social innovation and strategies for rural development.

(c) International and regional cooperation and coordination

14.20. Appropriate international and regional agencies should:

a. Reinforce their work with non-governmental organizations in collecting and disseminating information on people's participation and people's organizations, testing participatory development methods, training and education for human resource development and strengthening the management structures of rural organizations;

b. Help develop information available through non-governmental organizations and promote an international ecological agricultural network to accelerate the development and implementation of ecological agriculture practices.

Means of implementation

(a) Financing and cost evaluation

14.21. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $4.4 billion, including about $650 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.22. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Encourage people's participation on farm technology development and transfer, incorporating indigenous ecological knowledge and practices;

b. Launch applied research on participatory methodologies, management strategies and local organizations.

(c) Human resource development

14.23. Governments at the appropriate level, with the support of the relevant international and regional organizations, should provide management and technical training to government administrators and members of resource-user groups in the principles, practice and benefits of people's participation in rural development.

(d) Capacity-building

14.24. Governments at the appropriate level, with the support of the relevant international and regional organizations, should introduce management strategies and mechanisms, such as accounting and audit services for rural people's organizations and institutions for human resource development, and delegate administrative and financial responsibilities to local levels for decision-making, revenue-raising and expenditure.

C. Improving farm production and farming systems through diversification of farm and non-farm employment and infrastructure development

Basis for action

14.25. Agriculture needs to be intensified to meet future demands for commodities and to avoid further expansion onto marginal lands and encroachment on fragile ecosystems. Increased use of external inputs and development of specialized production and farming systems tend to increase vulnerability to environmental stresses and market fluctuations. There is, therefore, a need to intensify agriculture by diversifying the production systems for maximum efficiency in the utilization of local resources, while minimizing environmental and economic risks. Where intensification of farming systems is not possible, other on-farm and off-farm employment opportunities should be identified and developed, such as cottage industries, wildlife utilization, aquaculture and fisheries, non-farm activities, such as light village-based manufacturing, farm commodity processing, agribusiness, recreation and tourism, etc.

Objectives

14.26. The objectives of this programme area are:

a. To improve farm productivity in a sustainable manner, as well as to increase diversification, efficiency, food security and rural incomes, while ensuring that risks to the ecosystem are minimized;

b. To enhance the self-reliance of farmers in developing and improving rural infrastructure, and to facilitate the transfer of environmentally sound technologies for integrated production and farming systems, including indigenous technologies and the sustainable use of biological and ecological processes, including agroforestry, sustainable wildlife conservation and management, aquaculture, inland fisheries and animal husbandry;

c. To create farm and non-farm employment opportunities, particularly among the poor and those living in marginal areas, taking into account the alternative livelihood proposal inter alia in dryland areas.

Activities

(a) Management-related activities

14.27. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Develop and disseminate to farming households integrated farm management technologies, such as crop rotation, organic manuring and other techniques involving reduced use of agricultural chemicals, multiple techniques for sources of nutrients and the efficient utilization of external inputs, while enhancing techniques for waste and by-product utilization and prevention of pre- and post-harvest losses, taking particular note of the role of women;

b. Create non-farm employment opportunities through private small-scale agro-processing units, rural service centres and related infrastructural improvements;

c. Promote and improve rural financial networks that utilize investment capital resources raised locally;

d. Provide the essential rural infrastructure for access to agricultural inputs and services, as well as to national and local markets, and reduce food losses;

e. Initiate and maintain farm surveys, on-farm testing of appropriate technologies and dialogue with rural communities to identify constraints and bottlenecks and find solutions;

f. Analyse and identify possibilities for economic integration of agricultural and forestry activities, as well as water and fisheries, and to take effective measures to encourage forest management and growing of trees by farmers (farm forestry) as an option for resource development.

(b) Data and information

14.28. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Analyse the effects of technical innovations and incentives on farm-household income and well-being;

b. Initiate and maintain on-farm and off-farm programmes to collect and record indigenous knowledge.

(c) International and regional cooperation and coordination

14.29 International institutions, such as FAO and IFAD, international agricultural research centres, such as CGIAR, and regional centres should diagnose the world's major agro-ecosystems, their extension, ecological and socio-economic characteristics, their susceptibility to deterioration and their productive potential. This could form the basis for technology development and exchange and for regional research collaboration.

Means of implementation

(a) Financing and cost evaluation

14.29. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $10 billion, including about $1.5 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.30. Governments at the appropriate level, with the support of the relevant international and regional organizations, should strengthen research on agricultural production systems in areas with different endowments and agro-ecological zones, including comparative analysis of the intensification, diversification and different levels of external and internal inputs.

(c) Human resource development

14.31. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Promote educational and vocational training for farmers and rural communities through formal and non-formal education;

b. Launch awareness and training programmes for entrepreneurs, managers, bankers and traders in rural servicing and small-scale agro-processing techniques.

(d) Capacity-building

14.32. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Improve their organizational capacity to deal with issues related to off-farm activities and rural industry development;

b. Expand credit facilities and rural infrastructure related to processing, transportation and marketing.

D. Land-resource planning, information and education for agriculture

Basis for action

14.33. Inappropriate and uncontrolled land uses are a major cause of degradation and depletion of land resources. Present land use often disregards the actual potentials, carrying capacities and limitations of land resources, as well as their diversity in space. It is estimated that the world's population, now at 5.4 billion, will be 6.25 billion by the turn of the century. The need to increase food production to meet the expanding needs of the population will put enormous pressure on all natural resources, including land.

14.34. Poverty and malnutrition are already endemic in many regions. The destruction and degradation of agricultural and environmental resources is a major issue. Techniques for increasing production and conserving soil and water resources are already available but are not widely or systematically applied. A systematic approach is needed for identifying land uses and production systems that are sustainable in each land and climate zone, including the economic, social and institutional mechanisms necessary for their implementation. 3/

Objectives

14.35. The objectives of this programme area are:

a. To harmonize planning procedures, involve farmers in the planning process, collect land-resource data, design and establish databases, define land areas of similar capability, identify resource problems and values that need to be taken into account to establish mechanisms to encourage efficient and environmentally sound use of resources;

b. To establish agricultural planning bodies at national and local levels to decide priorities, channel resources and implement programmes.

Activities

(a) Management-related activities

14.36. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Establish and strengthen agricultural land-use and land-resource planning, management, education and information at national and local levels;

b. Initiate and maintain district and village agricultural land-resource planning, management and conservation groups to assist in problem identification, development of technical and management solutions, and project implementation.

(b) Data and information

14.37. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Collect, continuously monitor, update and disseminate information, whenever possible, on the utilization of natural resources and living conditions, climate, water and soil factors, and on land use, distribution of vegetation cover and animal species, utilization of wild plants, production systems and yields, costs and prices, and social and cultural considerations that affect agricultural and adjacent land use;

b. Establish programmes to provide information, promote discussion and encourage the formation of management groups.

(c) International and regional cooperation and coordination

14.38. The appropriate United Nations agencies and regional organizations should:

a. Strengthen or establish international, regional and subregional technical working groups with specific terms of reference and budgets to promote the integrated use of land resources for agriculture, planning, data collection and diffusion of simulation models of production and information dissemination;

b. Develop internationally acceptable methodologies for the establishment of databases, description of land uses and multiple goal optimization.

Means of implementation

(a) Financing and cost evaluation

14.39. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.7 billion, including about $250 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.40. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Develop databases and geographical information systems to store and display physical, social and economic information pertaining to agriculture, and the definition of ecological zones and development areas;

b. Select combinations of land uses and production systems appropriate to land units through multiple goal optimization procedures, and strengthen delivery systems and local community participation;

c. Encourage integrated planning at the watershed and landscape level to reduce soil loss and protect surface and groundwater resources from chemical pollution.

(c) Human resource development

14.41. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Train professionals and planning groups at national, district and village levels through formal and informal instructional courses, travel and interaction;

b. Generate discussion at all levels on policy, development and environmental issues related to agricultural land use and management, through media programmes, conferences and seminars.

(d) Capacity-building

14.42. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Establish land-resource mapping and planning units at national, district and village levels to act as focal points and links between institutions and disciplines, and between Governments and people;

b. Establish or strengthen Governments and international institutions with responsibility for agricultural resource survey, management and development; rationalize and strengthen legal frameworks; and provide equipment and technical assistance.

E. Land conservation and rehabilitation

Basis for action

14.43. Land degradation is the most important environmental problem affecting extensive areas of land in both developed and developing countries. The problem of soil erosion is particularly acute in developing countries, while problems of salinization, waterlogging, soil pollution and loss of soil fertility are increasing in all countries. Land degradation is serious because the productivity of huge areas of land is declining just when populations are increasing rapidly and the demand on the land is growing to produce more food, fibre and fuel. Efforts to control land degradation, particularly in developing countries, have had limited success to date. Well planned, long-term national and regional land conservation and rehabilitation programmes, with strong political support and adequate funding, are now needed. While land-use planning and land zoning, combined with better land management, should provide long-term solutions, it is urgent to arrest land degradation and launch conservation and rehabilitation programmes in the most critically affected and vulnerable areas.

Objectives

14.44. The objectives of this programme area are:

a. By the year 2000, to review and initiate, as appropriate, national land-resource surveys, detailing the location, extent and severity of land degradation;

b. To prepare and implement comprehensive policies and programmes leading to the reclamation of degraded lands and the conservation of areas at risk, as well as improve the general planning, management and utilization of land resources and preserve soil fertility for sustainable agricultural development.

Activities

(a) Management-related activities

14.45. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Develop and implement programmes to remove and resolve the physical, social and economic causes of land degradation, such as land tenure, appropriate trading systems and agricultural pricing structures, which lead to inappropriate land-use management;

b. Provide incentives and, where appropriate and possible, resources for the participation of local communities in the planning, implementation and maintenance of their own conservation and reclamation programmes;

c. Develop and implement programmes for the rehabilitation of land degraded by water-logging and salinity;

d. Develop and implement programmes for the progressive use of non-cultivated land with agricultural potential in a sustainable way.

(b) Data and information

14.46. Governments, at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Conduct periodic surveys to assess the extent and state of its land resources;

b. Strengthen and establish national land-resource data banks, including identification of the location, extent and severity of existing land degradation, as well as areas at risk, and evaluate the progress of the conservation and rehabilitation programmes launched in this regard;

c. Collect and record information on indigenous conservation and rehabilitation practices and farming systems as a basis for research and extension programmes.

(c) International and regional cooperation and coordination

14.47. The appropriate United Nations agencies, regional organizations and non-governmental organizations should:

a. Develop priority conservation and rehabilitation programmes with advisory services to Governments and regional organizations;

b. Establish regional and subregional networks for scientists and technicians to exchange experiences, develop joint programmes and spread successful technologies on land conservation and rehabilitation.

Means of implementation

(a) Financing and cost evaluation

14.48. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $5 billion, including about $800 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.49. Governments at the appropriate level, with the support of the relevant international and regional organizations, should help farming household communities to investigate and promote site-specific technologies and farming systems that conserve and rehabilitate land, while increasing agricultural production, including conservation tillage agroforestry, terracing and mixed cropping.

(c) Human resource development

14.50. Governments at the appropriate level, with the support of the relevant international and regional organizations, should train field staff and land users in indigenous and modern techniques of conservation and rehabilitation and should establish training facilities for extension staff and land users.

(d) Capacity-building

14.51. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Develop and strengthen national research institutional capacity to identify and implement effective conservation and rehabilitation practices that are appropriate to the existing socio-economic physical conditions of the land users;

b. Coordinate all land conservation and rehabilitation policies, strategies and programmes with related ongoing programmes, such as national environment action plans, the Tropical Forestry Action Plan and national development programmes.

F. Water for sustainable food production and sustainable rural development

14.52. This programme area is included in chapter 18 (Protection of the quality and supply of freshwater resources), programme area F.

G. Conservation and sustainable utilization of plant genetic resources for food and sustainable agriculture

Basis for action

14.53. Plant genetic resources for agriculture (PGRFA) are an essential resource to meet future needs for food. Threats to the security of these resources are growing, and efforts to conserve, develop and use genetic diversity are underfunded and understaffed. Many existing gene banks provide inadequate security and, in some instances, the loss of plant genetic diversity in gene banks is as great as it is in the field.

14.54. The primary objective is to safeguard the world's genetic resources while preserving them to use sustainably. This includes the development of measures to facilitate the conservation and use of plant genetic resources, networks of in situ conservation areas and use of tools such as ex situ collections and germ plasma banks. Special emphasis could be placed on the building of endogenous capacity for characterization, evaluation and utilization of PGRFA, particularly for the minor crops and other underutilized or non-utilized species of food and agriculture, including tree species for agro-forestry. Subsequent action could be aimed at consolidation and efficient management of networks of in situ conservation areas and use of tools such as ex situ collections and germ plasma banks.

14.55. Major gaps and weaknesses exist in the capacity of existing national and international mechanisms to assess, study, monitor and use plant genetic resources to increase food production. Existing institutional capacity, structures and programmes are generally inadequate and largely underfunded. There is genetic erosion of invaluable crop species. Existing diversity in crop species is not used to the extent possible for increased food production in a sustainable way. 4/

Objectives

14.56. The objectives of this programme area are:

a. To complete the first regeneration and safe duplication of existing ex situ collections on a world-wide basis as soon as possible;

b. To collect and study plants useful for increasing food production through joint activities, including training, within the framework of networks of collaborating institutions;

c. Not later than the year 2000, to adopt policies and strengthen or establish programmes for in situ on-farm and ex situ conservation and sustainable use of plant genetic resources for food and agriculture, integrated into strategies and programmes for sustainable agriculture;

d. To take appropriate measures for the fair and equitable sharing of benefits and results of research and development in plant breeding between the sources and users of plant genetic resources.

Activities

(a) Management-related activities

14.57. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Develop and strengthen institutional capacity, structures and programmes for conservation and use of PGRFA;

b. Strengthen and establish research in the public domain on PGRFA evaluation and utilization, with the objectives of sustainable agriculture and rural development in view;

c. Develop multiplication/propagation, exchange and dissemination facilities for PGRFAs (seeds and planting materials), particularly in developing countries and monitor, control and evaluate plant introductions;

d. Prepare plans or programmes of priority action on conservation and sustainable use of PGRFA, based, as appropriate, on country studies on PGRFA;

e. Promote crop diversification in agricultural systems where appropriate, including new plants with potential value as food crops;

f. Promote utilization as well as research on poorly known, but potentially useful, plants and crops, where appropriate;

g. Strengthen national capabilities for utilization of PGRFA, plant breeding and seed production capabilities, both by specialized institutions and farming communities.

(b) Data and information

14.58. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Develop strategies for networks of in situ conservation areas and use of tools such as on-farm ex situ collections, germplasm banks and related technologies;

b. Establish ex situ base collection networks;

c. Review periodically and report on the situation on PGRFA, using existing systems and procedures;

d. Characterize and evaluate PGRFA material collected, disseminate information to facilitate the use of PGRFA collections and assess genetic variation in collections.

(c) International and regional cooperation and coordination

14.59. The appropriate United Nations agencies and regional organizations should:

a. Strengthen the Global System on the Conservation and Sustainable Use of PGRFA by, inter alia, accelerating the development of the Global Information and Early Warning System to facilitate the exchange of information; developing ways to promote the transfer of environmentally sound technologies, in particular to developing countries; and taking further steps to realize farmers' rights;

b. Develop subregional, regional and global networks of PGRFA in situ in protected areas;

c. Prepare periodic state of the world reports on PGRFA;

d. Prepare a rolling global cooperative plan of action on PGRFA;

e. Promote, for 1994, the Fourth International Technical Conference on the Conservation and Sustainable Use of PGRFA, which is to adopt the first state of the world report and the first global plan of action on the conservation and sustainable use of PGRFA;

f. Adjust the Global System for the Conservation and Sustainable Use of PGRFA in line with the outcome of the negotiations of a convention on biological diversity.

Means of implementation

(a) Financing and cost evaluation

14.60. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $600 million, including about $300 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.61. Governments, at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Develop basic science research in such areas as plant taxonomy and phytogeography, utilizing recent developments, such as computer sciences, molecular genetics and in vitro cryopreservation;

b. Develop major collaborative projects between research programmes in developed and developing countries, particularly for the enhancement of poorly known or neglected crops;

c. Promote cost-effective technologies for keeping duplicate sets of ex situ collections (which can also be used by local communities);

d. Develop further conservation sciences in relation to in situ conservation and technical means to link it with ex situ conservation efforts.

(c) Human resource development

14.62. Governments at the appropriate level and with the support of the relevant international and regional organizations should:

a. Promote training programmes at both undergraduate and post-graduate levels in conservation sciences for running PGRFA facilities and for the design and implementation of national programmes in PGRFA;

b. Raise the awareness of agricultural extension services in order to link PGRFA activities with user communities;

c. Develop training materials to promote conservation and utilization of PGRFA at the local level.

(d) Capacity-building

14.63. Governments at the appropriate level, with the support of the relevant international and regional organizations, should establish national policies to provide legal status for and strengthen legal aspects of PGRFA, including long-term financial commitments for germplasm collections and implementation of activities in PGRFA.

H. Conservation and sustainable utilization of animal genetic resources for sustainable agriculture

Basis for action

14.64. The need for increased quantity and quality of animal products and for draught animals calls for conservation of the existing diversity of animal breeds to meet future requirements, including those for use in biotechnology. Some local animal breeds, in addition to their socio-cultural value, have unique attributes for adaptation, disease resistance and specific uses and should be preserved. These local breeds are threatened by extinction as a result of the introduction of exotic breeds and of changes in livestock production systems.

Objectives

14.65. The objectives of this programme area are:

a. To enumerate and describe all breeds of livestock used in animal agriculture in as broad a way as possible and begin a 10-year programme of action;

b. To establish and implement action programmes to identify breeds at risk, together with the nature of the risk and appropriate preservation measures;

c. To establish and implement development programmes for indigenous breeds in order to guarantee their survival, avoiding the risk of their being replaced by breed substitution or cross-breeding programmes.

Activities

(a) Management-related activities

14.66. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Draw up breed preservation plans, for endangered populations, including semen/embryo collection and storage, farm-based conservation of indigenous stock or in situ preservation;

b. Plan and initiate breed development strategies;

c. Select indigenous populations on the basis of regional importance and genetic uniqueness, for a 10-year programme, followed by selection of an additional cohort of indigenous breeds for development.

(b) Data and information

14.67. Governments at the appropriate level, with the support of the relevant international and regional organizations, should prepare and complete national inventories of available animal genetic resources. Cryogenic storage could be given priority over characterization and evaluation. Training of nationals in conservation and assessment techniques would be given special attention.

(c) International and regional cooperation and coordination

14.68. The appropriate United Nations and other international and regional agencies should:

a. Promote the establishment of regional gene banks to the extent that they are justified, based on principles of technical cooperation among developing countries;

b. Process, store and analyse animal genetic data at the global level, including the establishment of a world watch list and an early warning system for endangered breeds; global assessment of scientific and intergovernmental guidance of the programme and review of regional and national activities; development of methodologies, norms and standards (including international agreements); monitoring of their implementation; and related technical and financial assistance;

c. Prepare and publish a comprehensive database of animal genetic resources, describing each breed, its derivation, its relationship with other breeds, effective population size and a concise set of biological and production characteristics;

d. Prepare and publish a world watch list on farm animal species at risk to enable national Governments to take action to preserve endangered breeds and to seek technical assistance, where necessary.

Means of implementation

(a) Financing and cost evaluation

14.69. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $200 million, including about $100 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.70. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Use computer-based data banks and questionnaires to prepare a global inventory/world watch list;

b. Using cryogenic storage of germplasm, preserve breeds at serious risk and other material from which genes can be reconstructed.

(c) Human resource development

14.71. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Sponsor training courses for nationals to obtain the necessary expertise for data collection and handling and for the sampling of genetic material;

b. Enable scientists and managers to establish an information base for indigenous livestock breeds and promote programmes to develop and conserve essential livestock genetic material.

(d) Capacity-building

14.72. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Establish in-country facilities for artificial insemination centres and in situ breeding farms;

b. Promote in-country programmes and related physical infrastructure for animal livestock conservation and breed development, as well as for strengthening national capacities to take preventive action when breeds are endangered.

I. Integrated pest management and control in agriculture

Basis for action

14.73. World food demand projections indicate an increase of 50 per cent by the year 2000 which will more than double again by 2050. Conservative estimates put pre-harvest and post-harvest losses caused by pests between 25 and 50 per cent. Pests affecting animal health also cause heavy losses and in many areas prevent livestock development. Chemical control of agricultural pests has dominated the scene, but its overuse has adverse effects on farm budgets, human health and the environment, as well as on international trade. New pest problems continue to develop. Integrated pest management, which combines biological control, host plant resistance and appropriate farming practices and minimizes the use of pesticides, is the best option for the future, as it guarantees yields, reduces costs, is environmentally friendly and contributes to the sustainability of agriculture. Integrated pest management should go hand in hand with appropriate pesticide management to allow for pesticide regulation and control, including trade, and for the safe handling and disposal of pesticides, particularly those that are toxic and persistent.

Objectives

14.74. The objectives of this programme area are:

a. Not later than the year 2000, to improve and implement plant protection and animal health services, including mechanisms to control the distribution and use of pesticides, and to implement the International Code of Conduct on the Distribution and Use of Pesticides;

b. To improve and implement programmes to put integrated pest-management practices within the reach of farmers through farmer networks, extension services and research institutions;

c. Not later than the year 1998, to establish operational and interactive networks among farmers, researchers and extension services to promote and develop integrated pest management.

Activities

(a) Management-related activities

14.75. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Review and reform national policies and the mechanisms that would ensure the safe and appropriate use of pesticides - for example, pesticide pricing, pest control brigades, price-structure of inputs and outputs and integrated pest-management policies and action plans;

b. Develop and adopt efficient management systems to control and monitor the incidence of pests and disease in agriculture and the distribution and use of pesticides at the country level;

c. Encourage research and development into pesticides that are target-specific and readily degrade into harmless constituent parts after use;

d. Ensure that pesticide labels provide farmers with understandable information about safe handling, application and disposal.

(b) Data and information

14.76. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Consolidate and harmonize existing information and programmes on the use of pesticides that have been banned or severely restricted in different countries;

b. Consolidate, document and disseminate information on biological control agents and organic pesticides, as well as on traditional and other relevant knowledge and skills regarding alternative non-chemical ways of controlling pests;

c. Undertake national surveys to establish baseline information on the use of pesticides in each country and the side-effects on human health and environment, and also undertake appropriate education.

(c) International and regional cooperation and coordination

14.77. Appropriate United Nations agencies and regional organizations should:

a. Establish a system for collecting, analysing and disseminating data on the quantity and quality of pesticides used every year and their impact on human health and the environment;

b. Strengthen regional interdisciplinary projects and establish integrated pest management (IPM) networks to demonstrate the social, economic and environmental benefits of IPM for food and cash crops in agriculture;

c. Develop proper IPM, comprising the selection of the variety of biological, physical and cultural controls, as well as chemical controls, taking into account specific regional conditions.

Means of implementation

(a) Financing and cost evaluation

14.78. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.9 billion, including about $285 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.79. Governments at the appropriate level, with the support of the relevant international and regional organizations, should launch on-farm research in the development of non-chemical alternative pest management technologies.

(c) Human resource development

14.80. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Prepare and conduct training programmes on approaches and techniques for integrated pest management and control of pesticide use, to inform policy makers, researchers, non-governmental organizations and farmers;

b. Train extension agents and involve farmers and women's groups in crop health and alternative non-chemical ways of controlling pests in agriculture.

(d) Capacity-building

14.81. Governments at the appropriate level, with the support of the relevant international and regional organizations, should strengthen national public administrations and regulatory bodies in the control of pesticides and the transfer of technology for integrated pest management.

J. Sustainable plant nutrition to increase food production

Basis for action

14.82. Plant nutrient depletion is a serious problem resulting in loss of soil fertility, particularly in developing countries. To maintain soil productivity, the FAO sustainable plant nutrition programmes could be helpful. In sub-Saharan Africa, nutrient output from all sources currently exceeds inputs by a factor of three or four, the net loss being estimated at some 10 million metric tons per year. As a result, more marginal lands and fragile natural ecosystems are put under agricultural use, thus creating further land degradation and other environmental problems. The integrated plant nutrition approach aims at ensuring a sustainable supply of plant nutrients to increase future yields without harming the environment and soil productivity.

14.83. In many developing countries, population growth rates exceed 3 per cent a year, and national agricultural production has fallen behind food demand. In these countries the goal should be to increase agricultural production by at least 4 per cent a year, without destroying the soil fertility. This will require increasing agricultural production in high-potential areas through efficiency in the use of inputs. Trained labour, energy supply, adapted tools and technologies, plant nutrients and soil enrichment will all be essential.

Objectives

14.84. The objectives of this programme area are:

a. Not later than the year 2000, to develop and maintain in all countries the integrated plant nutrition approach, and to optimize availability of fertilizer and other plant nutrient sources;

b. Not later than the year 2000, to establish and maintain institutional and human infrastructure to enhance effective decision-making on soil productivity;

c. To develop and make available national and international know-how to farmers, extension agents, planners and policy makers on environmentally sound new and existing technologies and soil-fertility management strategies for application in promoting sustainable agriculture.

Activities

(a) Management-related activities

14.85. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Formulate and apply strategies that will enhance soil fertility maintenance to meet sustainable agricultural production and adjust the relevant agricultural policy instruments accordingly;

b. Integrate organic and inorganic sources of plant nutrients in a system to sustain soil fertility and determine mineral fertilizer needs;

c. Determine plant nutrient requirements and supply strategies and optimize the use of both organic and inorganic sources, as appropriate, to increase farming efficiency and production;

d. Develop and encourage processes for the recycling of organic and inorganic waste into the soil structure, without harming the environment, plant growth and human health.

(b) Data and information

14.86. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Assess "national accounts" for plant nutrients, including supplies (inputs) and losses (outputs) and prepare balance sheets and projections by cropping systems;

b. Review technical and economic potentials of plant nutrient sources, including national deposits, improved organic supplies, recycling, wastes, topsoil produced from discarded organic matter and biological nitrogen fixation.

(c) International and regional cooperation and coordination

14.87. The appropriate United Nations agencies, such as FAO, the international agricultural research institutes, and non-governmental organizations should collaborate in carrying out information and publicity campaigns about the integrated plant nutrients approach, efficiency of soil productivity and their relationship to the environment.

Means of implementation

(a) Financing and cost evaluation

14.88. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $3.2 billion, including about $475 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.89. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Develop site-specific technologies at benchmark sites and farmers' fields that fit prevailing socio-economic and ecological conditions through research that involves the full collaboration of local populations;

b. Reinforce interdisciplinary international research and transfer of technology in cropping and farming systems research, improved in situ biomass production techniques, organic residue management and agroforestry technologies.

(c) Human resource development

14.90. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Train extension officers and researchers in plant nutrient management, cropping systems and farming systems, and in economic evaluation of plant nutrient impact;

b. Train farmers and women's groups in plant nutrition management, with special emphasis on topsoil conservation and production.

(d) Capacity-building

14.91. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Develop suitable institutional mechanisms for policy formulation to monitor and guide the implementation of integrated plant nutrition programmes through an interactive process involving farmers, research, extension services and other sectors of society;

b. Where appropriate, strengthen existing advisory services and train staff, develop and test new technologies and facilitate the adoption of practices to upgrade and maintain full productivity of the land.

K. Rural energy transition to enhance productivity

Basis for action

14.92. Energy supplies in many countries are not commensurate with their development needs and are highly priced and unstable. In rural areas of the developing countries, the chief sources of energy are fuelwood, crop residues and manure, together with animal and human energy. More intensive energy inputs are required for increased productivity of human labour and for income-generation. To this end, rural energy policies and technologies should promote a mix of cost-effective fossil and renewable energy sources that is itself sustainable and ensures sustainable agricultural development. Rural areas provide energy supplies in the form of wood. The full potential of agriculture and agroforestry, as well as common property resources, as sources of renewable energy, is far from being realized. The attainment of sustainable rural development is intimately linked with energy demand and supply patterns. 5/

Objectives

14.93. The objectives of this programme area are:

a. Not later than the year 2000, to initiate and encourage a process of environmentally sound energy transition in rural communities, from unsustainable energy sources, to structured and diversified energy sources by making available alternative new and renewable sources of energy;

b. To increase the energy inputs available for rural household and agro-industrial needs through planning and appropriate technology transfer and development;

c. To implement self-reliant rural programmes favouring sustainable development of renewable energy sources and improved energy efficiency.

Activities

(a) Management-related activities

14.94. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Promote pilot plans and projects consisting of electrical, mechanical and thermal power (gasifiers, biomass, solar driers, wind-pumps and combustion systems) that are appropriate and likely to be adequately maintained;

b. Initiate and promote rural energy programmes supported by technical training, banking and related infrastructure;

c. Intensify research and the development, diversification and conservation of energy, taking into account the need for efficient use and environmentally sound technology.

(b) Data and information

14.95. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Collect and disseminate data on rural energy supply and demand patterns related to energy needs for households, agriculture and agro-industry;

b. Analyse sectoral energy and production data in order to identify rural energy requirements.

(c) International and regional cooperation and coordination

14.96. The appropriate United Nations agencies and regional organizations should, drawing on the experience and available information of non-governmental organizations in this field, exchange country and regional experience on rural energy planning methodologies in order to promote efficient planning and select cost-effective technologies.

Means of implementation

(a) Financing and cost evaluation

14.97. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.8 billion per year, including about $265 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.98. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Intensify public and private sector research in developing and industrialized countries on renewable sources of energy for agriculture;

b. Undertake research and transfer of energy technologies in biomass and solar energy to agricultural production and post-harvest activities.

(c) Human resource development

14.99. Governments at the appropriate level, with the support of the relevant international and regional organizations, should enhance public awareness of rural energy problems, stressing the economic and environmental advantages of renewable energy sources.

(d) Capacity-building

14.100. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

a. Establish national institutional mechanisms for rural energy planning and management that would improve efficiency in agricultural productivity and reach the village and household level;

b. Strengthen extension services and local organizations to implement plans and programmes for new and renewable sources of energy at the village level.

L. Evaluation of the effects of ultraviolet radiation on plants and animals caused by the depletion of the stratospheric ozone layer

Basis for action

14.101. The increase of ultraviolet radiation as a consequence of the depletion of the stratospheric ozone layer is a phenomenon that has been recorded in different regions of the world, particularly in the southern hemisphere. Consequently, it is important to evaluate its effects on plant and animal life, as well as on sustainable agricultural development.

Objective

14.102. The objective of this programme area is to undertake research to determine the effects of increased ultraviolet radiation resulting from stratospheric ozone layer depletion on the Earth's surface, and on plant and animal life in affected regions, as well as its impact on agriculture, and to develop, as appropriate, strategies aimed at mitigating its adverse effects.

Activities

Management-related activities

14.103. In affected regions, Governments at the appropriate level, with the support of the relevant international and regional organizations, should take the necessary measures, through institutional cooperation, to facilitate the implementation of research and evaluation regarding the effects of enhanced ultraviolet radiation on plant and animal life, as well as on agricultural activities, and consider taking appropriate remedial measures.

Notes

1/ Some of the issues in this programme area are presented in chapter 3 of Agenda 21 (Combating poverty).

2/ Some of the issues in this programme area are discussed in chapter 8 of Agenda 21 (Integrating environment and development in decision-making) and in chapter 37 (National mechanisms and international cooperation for capacity-building in developing countries).

3/ Some of the issues are presented in chapter 10 of Agenda 21 (Integrated approach to the planning and management of land resources).

4/ The activities of this programme area are related to some of the activities in chapter 15 of Agenda 21 (Conservation of biological diversity).

5/ The activities of this programme area are related to some of the activities in chapter 9 of Agenda 21 (Protection of the atmosphere).

Agenda 21 – Chapter 15
CONSERVATION OF BIOLOGICAL DIVERSITY

15.1. The objectives and activities in this chapter of Agenda 21 are intended to improve the conservation of biological diversity and the sustainable use of biological resources, as well as to support the Convention on Biological Diversity.

15.2. Our planet's essential goods and services depend on the variety and variability of genes, species, populations and ecosystems. Biological resources feed and clothe us and provide housing, medicines and spiritual nourishment. The natural ecosystems of forests, savannahs, pastures and rangelands, deserts, tundras, rivers, lakes and seas contain most of the Earth's biodiversity. Farmers' fields and gardens are also of great importance as repositories, while gene banks, botanical gardens, zoos and other germplasm repositories make a small but significant contribution. The current decline in biodiversity is largely the result of human activity and represents a serious threat to human development.

PROGRAMME AREA

Conservation of biological diversity

Basis for action

15.3. Despite mounting efforts over the past 20 years, the loss of the world's biological diversity, mainly from habitat destruction, over-harvesting, pollution and the inappropriate introduction of foreign plants and animals, has continued. Biological resources constitute a capital asset with great potential for yielding sustainable benefits. Urgent and decisive action is needed to conserve and maintain genes, species and ecosystems, with a view to the sustainable management and use of biological resources. Capacities for the assessment, study and systematic observation and evaluation of biodiversity need to be reinforced at national and international levels. Effective national action and international cooperation is required for the in situ protection of ecosystems, for the ex situ conservation of biological and genetic resources and for the enhancement of ecosystem functions. The participation and support of local communities are elements essential to the success of such an approach. Recent advances in biotechnology have pointed up the likely potential for agriculture, health and welfare and for the environmental purposes of the genetic material contained in plants, animals and micro-organisms. At the same time, it is particularly important in this context to stress that States have the sovereign right to exploit their own biological resources pursuant to their environmental policies, as well as the responsibility to conserve their biodiversity and use their biological resources sustainably, and to ensure that activities within their jurisdiction or control do not cause damage to the biological diversity of other States or of areas beyond the limits of national jurisdiction.

Objectives

15.4. Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and regional, intergovernmental and non-governmental organizations, the private sector and financial institutions, and taking into consideration indigenous people and their communities, as well as social and economic factors, should:

a. Press for the early entry into force of the Convention on Biological Diversity, with the widest possible participation;

b. Develop national strategies for the conservation of biological diversity and the sustainable use of biological resources;

c. Integrate strategies for the conservation of biological diversity and the sustainable use of biological resources into national development strategies and/or plans;

d. Take appropriate measures for the fair and equitable sharing of benefits derived from research and development and use of biological and genetic resources, including biotechnology, between the sources of those resources and those who use them;

e. Carry out country studies, as appropriate, on the conservation of biological diversity and the sustainable use of biological resources, including analyses of relevant costs and benefits, with particular reference to socio-economic aspects;

f. Produce regularly updated world reports on biodiversity based upon national assessments;

g. Recognize and foster the traditional methods and the knowledge of indigenous people and their communities, emphasizing the particular role of women, relevant to the conservation of biological diversity and the sustainable use of biological resources, and ensure the opportunity for the participation of those groups in the economic and commercial benefits derived from the use of such traditional methods and knowledge; 1/

h. Implement mechanisms for the improvement, generation, development and sustainable use of biotechnology and its safe transfer, particularly to developing countries, taking account the potential contribution of biotechnology to the conservation of biological diversity and the sustainable use of biological resources; 2/

i. Promote broader international and regional cooperation in furthering scientific and economic understanding of the importance of biodiversity and its functions in ecosystems;

j. Develop measures and arrangements to implement the rights of countries of origin of genetic resources or countries providing genetic resources, as defined in the Convention on Biological Diversity, particularly developing countries, to benefit from the biotechnological development and the commercial utilization of products derived from such resources. 2/ 3/

Activities

(a) Management-related activities

15.5. Governments at the appropriate levels, consistent with national policies and practices, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental organizations and, with the support of indigenous people and their communities, non-governmental organizations and other groups, including the business and scientific communities, and consistent with the requirements of international law, should, as appropriate:

a. Develop new or strengthen existing strategies, plans or programmes of action for the conservation of biological diversity and the sustainable use of biological resources, taking account of education and training needs; 4/

b. Integrate strategies for the conservation of biological diversity and the sustainable use of biological and genetic resources into relevant sectoral or cross-sectoral plans, programmes and policies, with particular reference to the special importance of terrestrial and aquatic biological and genetic resources for food and agriculture; 5/

c. Undertake country studies or use other methods to identify components of biological diversity important for its conservation and for the sustainable use of biological resources, ascribe values to biological and genetic resources, identify processes and activities with significant impacts upon biological diversity, evaluate the potential economic implications of the conservation of biological diversity and the sustainable use of biological and genetic resources, and suggest priority action;

d. Take effective economic, social and other appropriate incentive measures to encourage the conservation of biological diversity and the sustainable use of biological resources, including the promotion of sustainable production systems, such as traditional methods of agriculture, agroforestry, forestry, range and wildlife management, which use, maintain or increase biodiversity; 5/

e. Subject to national legislation, take action to respect, record, protect and promote the wider application of the knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles for the conservation of biological diversity and the sustainable use of biological resources, with a view to the fair and equitable sharing of the benefits arising, and promote mechanisms to involve those communities, including women, in the conservation and management of ecosystems; 1/

f. Undertake long-term research into the importance of biodiversity for the functioning of ecosystems and the role of ecosystems in producing goods, environmental services and other values supporting sustainable development, with particular reference to the biology and reproductive capacities of key terrestrial and aquatic species, including native, cultivated and cultured species; new observation and inventory techniques; ecological conditions necessary for biodiversity conservation and continued evolution; and social behaviour and nutrition habits dependent on natural ecosystems, where women play key roles. The work should be undertaken with the widest possible participation, especially of indigenous people and their communities, including women; 1/

g. Take action where necessary for the conservation of biological diversity through the in situ conservation of ecosystems and natural habitats, as well as primitive cultivars and their wild relatives, and the maintenance and recovery of viable populations of species in their natural surroundings, and implement ex situ measures, preferably in the source country. In situ measures should include the reinforcement of terrestrial, marine and aquatic protected area systems and embrace, inter alia, vulnerable freshwater and other wetlands and coastal ecosystems, such as estuaries, coral reefs and mangroves; 6/

h. Promote the rehabilitation and restoration of damaged ecosystems and the recovery of threatened and endangered species;

i. Develop policies to encourage the conservation of biodiversity and the sustainable use of biological and genetic resources on private lands;

j. Promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas;

k. Introduce appropriate environmental impact assessment procedures for proposed projects likely to have significant impacts upon biological diversity, providing for suitable information to be made widely available and for public participation, where appropriate, and encourage the assessment of the impacts of relevant policies and programmes on biological diversity;

l. Promote, where appropriate, the establishment and strengthening of national inventory, regulation or management and control systems related to biological resources, at the appropriate level;

m. Take measures to encourage a greater understanding and appreciation of the value of biological diversity, as manifested both in its component parts and in the ecosystem services provided.

(b) Data and information

15.6. Governments at the appropriate level, consistent with national policies and practices, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental organizations, and with the support of indigenous people and their communities, non-governmental organizations and other groups, including the business and scientific communities, and consistent with the requirements of international law, should, as appropriate: 7/

a. Regularly collate, evaluate and exchange information on the conservation of biological diversity and the sustainable use of biological resources;

b. Develop methodologies with a view to undertaking systematic sampling and evaluation on a national basis of the components of biological diversity identified by means of country studies;

c. Initiate or further develop methodologies and begin or continue work on surveys at the appropriate level on the status of ecosystems and establish baseline information on biological and genetic resources, including those in terrestrial, aquatic, coastal and marine ecosystems, as well as inventories undertaken with the participation of local and indigenous people and their communities;

d. Identify and evaluate the potential economic and social implications and benefits of the conservation and sustainable use of terrestrial and aquatic species in each country, building upon the results of country studies;

e. Undertake the updating, analysis and interpretation of data derived from the identification, sampling and evaluation activities described above;

f. Collect, assess and make available relevant and reliable information in a timely manner and in a form suitable for decision-making at all levels, with the full support and participation of local and indigenous people and their communities.

(c) International and regional cooperation and coordination

15.7. Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental organizations, and, with the support of indigenous people and their communities, non-governmental organizations and other groups, including the business and scientific communities, and consistent with the requirements of international law, should, as appropriate:

a. Consider the establishment or strengthening of national or international capabilities and networks for the exchange of data and information of relevance to the conservation of biological diversity and the sustainable use of biological and genetic resources; 7/

b. Produce regularly updated world reports on biodiversity based upon national assessments in all countries;

c. Promote technical and scientific cooperation in the field of conservation of biological diversity and the sustainable use of biological and genetic resources. Special attention should be given to the development and strengthening of national capabilities by means of human resource development and institution-building, including the transfer of technology and/or development of research and management facilities, such as herbaria, museums, gene banks, and laboratories, related to the conservation of biodiversity; 8/

d. Without prejudice to the relevant provisions of the Convention on Biological Diversity, facilitate for this chapter the transfer of technologies relevant to the conservation of biological diversity and the sustainable use of biological resources or technologies that make use of genetic resources and cause no significant damage to the environment, in conformity with chapter 34, and recognizing that technology includes biotechnology; 2/ 8/

e. Promote cooperation between the parties to relevant international conventions and action plans with the aim of strengthening and coordinating efforts to conserve biological diversity and the sustainable use of biological resources;

f. Strengthen support for international and regional instruments, programmes and action plans concerned with the conservation of biological diversity and the sustainable use of biological resources;

g. Promote improved international coordination of measures for the effective conservation and management of endangered/non-pest migratory species, including appropriate levels of support for the establishment and management of protected areas in transboundary locations;

h. Promote national efforts with respect to surveys, data collection, sampling and evaluation, and the maintenance of gene banks.

Means of implementation

(a) Financing and cost evaluation

15.8. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this chapter to be about $3.5 billion, including about $1.75 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude

estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

15.9. Specific aspects to be addressed include the need to develop:

a. Efficient methodologies for baseline surveys and inventories, as well as for the systematic sampling and evaluation of biological resources;

b. Methods and technologies for the conservation of biological diversity and the sustainable use of biological resources;

c. Improved and diversified methods for ex situ conservation with a view tothe long-term conservation of genetic resources of importance for research and development.

(c) Human resource development

15.10. There is a need, where appropriate, to:

a. Increase the number and/or make more efficient use of trained personnel in scientific and technological fields relevant to the conservation of biological diversity and the sustainable use of biological resources;

b. Maintain or establish programmes for scientific and technical education and training of managers and professionals, especially in developing countries, on measures for the identification, conservation of biological diversity and the sustainable use of biological resources;

c. Promote and encourage understanding of the importance of the measures required for the conservation of biological diversity and the sustainable use of biological resources at all policy-making and decision-making levels in Governments, business enterprises and lending institutions, and promote and encourage the inclusion of these topics in educational programmes.

(d) Capacity-building

15.11. There is a need, where appropriate, to:

a. Strengthen existing institutions and/or establish new ones responsible for the conservation of biological diversity and to consider the development of mechanisms such as national biodiversity institutes or centres;

b. Continue to build capacity for the conservation of biological diversity and the sustainable use of biological resources in all relevant sectors;

c. Build capacity, especially within Governments, business enterprises and bilateral and multilateral development agencies, for integrating biodiversity concerns, potential benefits and opportunity cost calculations into project design, implementation and evaluation processes, as well as for evaluating the impact on biological diversity of proposed development projects;

d. Enhance the capacity of governmental and private institutions, at the appropriate level, responsible for protected area planning and management to undertake intersectoral coordination and planning with other governmental institutions, non-governmental organizations and, where appropriate, indigenous people and their communities.

Agenda 21 – Chapter 16
ENVIRONMENTALLY SOUND MANAGEMENT OF BIOTECHNOLOGY

16.1. Biotechnology is the integration of the new techniques emerging from modern biotechnology with the well-established approaches of traditional biotechnology. Biotechnology, an emerging knowledge-intensive field, is a set of enabling techniques for bringing about specific man-made changes in deoxyribonucleic acid (DNA), or genetic material, in plants, animals and microbial systems, leading to useful products and technologies. By itself, biotechnology cannot resolve all the fundamental problems of environment and development, so expectations need to be tempered by realism. Nevertheless, it promises to make a significant contribution in enabling the development of, for example, better health care, enhanced food security through sustainable agricultural practices, improved supplies of potable water, more efficient industrial development processes for transforming raw materials, support for sustainable methods of afforestation and reforestation, and detoxification of hazardous wastes. Biotechnology also offers new opportunities for global partnerships, especially between the countries rich in biological resources (which include genetic resources) but lacking the expertise and investments needed to apply such resources through biotechnology and the countries that have developed the technological expertise to transform biological resources so that they serve the needs of sustainable development. 1/ Biotechnology can assist in the conservation of those resources through, for example, ex situ techniques. The programme areas set out below seek to foster internationally agreed principles to be applied to ensure the environmentally sound management of biotechnology, to engender public trust and confidence, to promote the development of sustainable applications of biotechnology and to establish appropriate enabling mechanisms, especially within developing countries, through the following activities:

a. Increasing the availability of food, feed and renewable raw materials;

b. Improving human health;

c. Enhancing protection of the environment;

d. Enhancing safety and developing international mechanisms for cooperation;

e. Establishing enabling mechanisms for the development and the environmentally sound application of biotechnology.

PROGRAMME AREAS

A. Increasing the availability of food, feed and renewable raw materials

Basis for action

16.2. To meet the growing consumption needs of the global population, the challenge is not only to increase food supply, but also to improve food distribution significantly while simultaneously developing more sustainable agricultural systems. Much of this increased productivity will need to take place in developing countries. It will require the successful and environmentally safe application of biotechnology in agriculture, in the environment and in human health care. Most of the investment in modern biotechnology has been in the industrialized world. Significant new investments and human resource development will be required in biotechnology, especially in the developing world.

Objectives

16.3. The following objectives are proposed, keeping in mind the need to promote the use of appropriate safety measures based on programme area D:

a. To increase to the optimum possible extent the yield of major crops, livestock, and aquaculture species, by using the combined resources of modern biotechnology and conventional plant/animal/micro-organism improvement, including the more diverse use of genetic material resources, both hybrid and original. 2/ Forest product yields should similarly be increased, to ensure the sustainable use of forests; 3/

b. To reduce the need for volume increases of food, feed and raw materials by improving the nutritional value (composition) of the source crops, animals and micro-organisms, and to reduce post-harvest losses of plant and animal products;

c. To increase the use of integrated pest, disease and crop management techniques to eliminate overdependence on agrochemicals, thereby encouraging environmentally sustainable agricultural practices;

d. To evaluate the agricultural potential of marginal lands in comparison with other potential uses and to develop, where appropriate, systems allowing for sustainable productivity increases;

e. To expand the applications of biotechnology in forestry, both for increasing yields and more efficient utilization of forest products and for improving afforestation and reforestation techniques. Efforts should be concentrated on species and products that are grown in and are of value particularly for developing countries;

f. To increase the efficiency of nitrogen fixation and mineral absorption by the symbiosis of higher plants with micro-organisms;

g. To improve capabilities in basic and applied sciences and in the management of complex interdisciplinary research projects.

Activities

(a) Management-related activities

16.4. Governments at the appropriate level, with the assistance of international and regional organizations and with the support of non-governmental organizations, the private sector and academic and scientific institutions, should improve both plant and animal breeding and micro-organisms through the use of traditional and modern biotechnologies, to enhance sustainable agricultural output to achieve food security, particularly in developing countries, with due regard to the prior identification of desired characteristics before modification, taking into account the needs of farmers, the socio-economic, cultural and environmental impacts of modifications and the need to promote sustainable social and economic development, paying particular attention to how the use of biotechnology will impact on the maintenance of environmental integrity.

16.5. More specifically, these entities should:

a. Improve productivity, nutritional quality and shelf-life of food and animal feed products, with efforts including work on pre- and post-harvest losses;

b. Further develop resistance to diseases and pests;

c. Develop plant cultivars tolerant and/or resistant to stress from factors such as pests and diseases and from abiotic causes;

d. Promote the use of underutilized crops of possible future importance for human nutrition and industrial supply of raw materials;

e. Increase the efficiency of symbiotic processes that assist sustainable agricultural production;

f. Facilitate the conservation and safe exchange of plant, animal and microbial germ plasm by applying risk assessment and management procedures, including improved diagnostic techniques for detection of pests and diseases by better methods of rapid propagation;

g. Develop improved diagnostic techniques and vaccines for the prevention and spread of diseases and for rapid assessment of toxins or infectious organisms in products for human use or livestock feed;

h. Identify more productive strains of fast-growing trees, especially for fuel wood, and develop rapid propagation methods to aid their wider dissemination and use;

i. Evaluate the use of various biotechnology techniques to improve the yields of fish, algal and other aquatic species;

j. Promote sustainable agricultural output by strengthening and broadening the capacity and scope of existing research centres to achieve the necessary critical mass through encouragement and monitoring of research into the development of biological products and processes of productive and environmental value that are economically and socially feasible, while taking safety considerations into account;

k. Promote the integration of appropriate and traditional biotechnologies for the purposes of cultivating genetically modified plants, rearing healthy animals and protecting forest genetic resources;

l. Develop processes to increase the availability of materials derived from biotechnology for use in food, feed and renewable raw materials production.

(b) Data and information

16.6. The following activities should be undertaken:

a. Consideration of comparative assessments of the potential of the different technologies for food production, together with a system for assessing the possible effects of biotechnologies on international trade in agricultural products;

b. Examination of the implications of the withdrawal of subsidies and the possible use of other economic instruments to reflect the environmental costs associated with the unsustainable use of agrochemicals;

c. Maintenance and development of data banks of information on environmental and health impacts of organisms to facilitate risk assessment;

d. Acceleration of technology acquisition, transfer and adaptation by developing countries to support national activities that promote food security.

(c) International and regional cooperation and coordination

16.7. Governments at the appropriate level, with the support of relevant international and regional organizations, should promote the following activities in conformity with international agreements or arrangements on biological diversity, as appropriate:

a. Cooperation on issues related to conservation of, access to and exchange of germ plasm; rights associated with intellectual property and informal innovations, including farmers' and breeders' rights; access to the benefits of biotechnology; and bio-safety;

b. Promotion of collaborative research programmes, especially in developing countries, to support activities outlined in this programme area, with particular reference to cooperation with local and indigenous people and their communities in the conservation of biological diversity and sustainable use of biological resources, as well as the fostering of traditional methods and knowledge of such groups in connection with these activities;

c. Acceleration of technology acquisition, transfer and adaptation by developing countries to support national activities that promote food security, through the development of systems for substantial and sustainable productivity increases that do not damage or endanger local ecosystems; 4/

d. Development of appropriate safety procedures based on programme area D, taking account of ethical considerations.

Means of implementation

(a) Financing and cost evaluation

16.8. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $5 billion, including about $50 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means*

(c) Human resource development

16.9. Training of competent professionals in the basic and applied sciences at all levels (including scientific personnel, technical staff and extension workers) is one of the most essential components of any programme of this kind. Creating awareness of the benefits and risks of biotechnology is essential. Given the importance of good management of research resources for the successful completion of large multidisciplinary projects, continuing programmes of formal training for scientists should include managerial training. Training programmes should also be developed, within the context of specific projects, to meet regional or national needs for comprehensively trained personnel capable of using advanced technology to reduce the "brain drain" from developing to developed countries. Emphasis should be given to

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* See paras. 16.6 and 16.7.

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encouraging collaboration between and training of scientists, extension workers and users to produce integrated systems. Additionally, special consideration should be given to the execution of programmes for training and exchange of knowledge on traditional biotechnologies and for training on safety procedures.

(d) Capacity-building

16.10. Institutional upgrading or other appropriate measures will be needed to build up technical, managerial, planning and administrative capacities at the national level to support the activities in this programme area. Such measures should be backed up by international, scientific, technical and financial assistance adequate to facilitate technical cooperation and raise the capacities of the developing countries. Programme area E contains further details.

B. Improving human health

Basis for action

16.11. The improvement of human health is one of the most important objectives of development. The deterioration of environmental quality, notably air, water and soil pollution owing to toxic chemicals, hazardous wastes, radiation and other sources, is a matter of growing concern. This degradation of the environment resulting from inadequate or inappropriate development has a direct negative effect on human health. Malnutrition, poverty, poor human settlements, lack of good-quality potable water and inadequate sanitation facilities add to the problems of communicable and non-communicable diseases. As a consequence, the health and well-being of people are exposed to increasing pressures.

Objectives

16.12. The main objective of this programme area is to contribute, through the environmentally sound application of biotechnology to an overall health programme, to: 5/

a. Reinforce or inaugurate (as a matter of urgency) programmes to help combat major communicable diseases;

b. Promote good general health among people of all ages;

c. Develop and improve programmes to assist in specific treatment of and protection from major non-communicable diseases;

d. Develop and strengthen appropriate safety procedures based on programme area D, taking account of ethical considerations;

e. Create enhanced capabilities for carrying out basic and applied research and for managing interdisciplinary research.

Activities

(a) Management-related activities

16.13. Governments at the appropriate level, with the assistance of international and regional organizations, academic and scientific institutions, and the pharmaceutical industry, should, taking into account appropriate safety and ethical considerations:

a. Develop national and international programmes for identifying and targeting those populations of the world most in need of improvement in general health and protection from diseases;

b. Develop criteria for evaluating the effectiveness and the benefits and risks of the proposed activities;

c. Establish and enforce screening, systematic sampling and evaluation procedures for drugs and medical technologies, with a view to barring the use of those that are unsafe for the purposes of experimentation; ensure that drugs and technologies relating to reproductive health are safe and effective and take account of ethical considerations;

d. Improve, systematically sample and evaluate drinking-water quality by introducing appropriate specific measures, including diagnosis of water-borne pathogens and pollutants;

e. Develop and make widely available new and improved vaccines against major communicable diseases that are efficient and safe and offer protection with a minimum number of doses, including intensifying efforts directed at the vaccines needed to combat common diseases of children;

f. Develop biodegradable delivery systems for vaccines that eliminate the need for present multiple-dose schedules, facilitate better coverage of the population and reduce the costs of immunization;

g. Develop effective biological control agents against disease-transmitting vectors, such as mosquitoes and resistant variants, taking account of environmental protection considerations;

h. Using the tools provided by modern biotechnology, develop, inter alia, improved diagnostics, new drugs and improved treatments and delivery systems;

i. Develop the improvement and more effective utilization of medicinal plants and other related sources;

j. Develop processes to increase the availability of materials derived from biotechnology, for use in improving human health.

(b) Data and information

16.14. The following activities should be undertaken:

a. Research to assess the comparative social, environmental and financial costs and benefits of different technologies for basic and reproductive health care within a framework of universal safety and ethical considerations;

b. Development of public education programmes directed at decision makers and the general public to encourage awareness and understanding of the relative benefits and risks of modern biotechnology, according to ethical and cultural considerations.

(c) International and regional cooperation and coordination

16.15. Governments at the appropriate levels, with the support of relevant international and regional organizations, should:

a. Develop and strengthen appropriate safety procedures based on programme area D, taking account of ethical considerations;

b. Support the development of national programmes, particularly in developing countries, for improvements in general health, especially protection from major communicable diseases, common diseases of children and disease-transmitting factors.

Means of implementation

16.16. To achieve the above goals, the activities need to be implemented with urgency if progress towards the control of major communicable diseases is to be achieved by the beginning of the next century. The spread of some diseases to all regions of the world calls for global measures. For more localized diseases, regional or national policies will be more appropriate. The achievement of goals calls for:

a. Continuous international commitment;

b. National priorities with a defined time-frame;

c. Scientific and financial input at global and national levels.

(a) Financing and cost evaluation

16.17. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $14 billion, including about $130 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

16.18. Well-coordinated multidisciplinary efforts involving cooperation between scientists, financial institutions and industries will be required. At the global level, this may mean collaboration between research institutions in different countries, with funding at the intergovernmental level, possibly supported by similar collaboration at the national level. Research and development support will also need to be strengthened, together with the mechanisms for providing the transfer of relevant technology.

(c) Human resource development

16.19. Training and technology transfer is needed at the global level, with regions and countries having access to, and participation in exchange of, information and expertise, particularly indigenous or traditional knowledge and related biotechnology. It is essential to create or enhance endogenous capabilities in developing countries to enable them to participate actively in the processes of biotechnology production. The training of personnel could be undertaken at three levels:

a. That of scientists required for basic and product-oriented research;

b. That of health personnel (to be trained in the safe use of new products) and of science managers required for complex intermultidisciplinary research;

c. That of tertiary-level technical workers required for delivery in the field.

(d) Capacity-building*

C. Enhancing protection of the environment

Basis for action

16.20. Environmental protection is an integral component of sustainable development. The environment is threatened in all its biotic and abiotic components: animals, plants, microbes and ecosystems comprising biological diversity; water, soil and air, which form the physical components of habitats and ecosystems; and all the interactions between the components of biodiversity and their sustaining habitats and ecosystems. With the continued increase in the use of chemicals, energy and non-renewable resources by an expanding global population, associated environmental problems will also increase. Despite increasing efforts to prevent waste accumulation and to promote recycling, the amount of environmental damage caused by overconsumption, the quantities of waste generated and the degree of unsustainable land use appear likely to continue growing.

16.21. The need for a diverse genetic pool of plant, animal and microbial germ plasm for sustainable development is well established. Biotechnology is one of many tools that can play an important role in supporting the rehabilitation of degraded ecosystems and landscapes. This may be done through the development of new techniques for reforestation and afforestation, germ plasm conservation, and cultivation of new plant varieties. Biotechnology can also contribute to the study of the effects exerted on the remaining organisms and on other organisms by organisms introduced into ecosystems.

Objectives

16.22. The aim of this programme is to prevent, halt and reverse environmental degradation through the appropriate use of biotechnology in conjunction with other technologies, while supporting safety

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* See programme area E.

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procedures as an integral component of the programme. Specific objectives include the inauguration as soon as possible of specific programmes with specific targets:

a. To adopt production processes making optimal use of natural resources, by recycling biomass, recovering energy and minimizing waste generation; 6/

b. To promote the use of biotechnologies, with emphasis on bio-remediation of land and water, waste treatment, soil conservation, reforestation, afforestation and land rehabilitation; 7/ 8/

c. To apply biotechnologies and their products to protect environmental integrity with a view to long-term ecological security.

Activities

(a) Management-related activities

16.23. Governments at the appropriate level, with the support of relevant international and regional organizations, the private sector, non-governmental organizations and academic and scientific institutions, should:

a. Develop environmentally sound alternatives and improvements for environmentally damaging production processes;

b. Develop applications to minimize the requirement for unsustainable synthetic chemical input and to maximize the use of environmentally appropriate products, including natural products (see programme area A);

c. Develop processes to reduce waste generation, treat waste before disposal and make use of biodegradable materials;

d. Develop processes to recover energy and provide renewable energy sources, animal feed and raw materials from recycling organic waste and biomass;

e. Develop processes to remove pollutants from the environment, including accidental oil spills, where conventional techniques are not available or are expensive, inefficient or inadequate;

f. Develop processes to increase the availability of planting materials, particularly indigenous varieties, for use in afforestation and reforestation and to improve sustainable yields from forests;

g. Develop applications to increase the availability of stress-tolerant planting material for land rehabilitation and soil conservation;

h. Promote the use of integrated pest management based on the judicious use of bio-control agents;

i. Promote the appropriate use of bio-fertilizers within national fertilizer programmes;

j. Promote the use of biotechnologies relevant to the conservation and scientific study of biological diversity and the sustainable use of biological resources;

k. Develop easily applicable technologies for the treatment of sewage and organic waste;

l. Develop new technologies for rapid screening of organisms for useful biological properties;

m. Promote new biotechnologies for tapping mineral resources in an environmentally sustainable manner.

(b) Data and information

16.24. Steps should be taken to increase access both to existing information about biotechnology and to facilities based on global databases.

(c) International and regional cooperation and coordination

16.25. Governments at the appropriate level, with the support of relevant international and regional organizations, should:

a. Strengthen research, training and development capabilities, particularly in developing countries, to support the activities outlined in this programme area;

b. Develop mechanisms for scaling up and disseminating environmentally sound biotechnologies of high environmental importance, especially in the short term, even though those biotechnologies may have limited commercial potential;

c. Enhance cooperation, including transfer of biotechnology, between participating countries for capacity-building;

d. Develop appropriate safety procedures based on programme area D, taking account of ethical considerations.

Means of implementation

(a) Financing and cost evaluation

16.26. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1 billion, including about $10 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means*
(c) Human resource development
16.27. The activities for this programme area will increase the demand for trained personnel. Support for existing training programmes needs to be increased, for example, at the university and technical institute level, as well as the exchange of trained personnel between countries and regions. New and additional training programmes also need to be developed, for example, for technical and support personnel. There is also an urgent need to improve the level of understanding of biological principles and their policy implications among decision makers in Governments, and financial and other institutions.

(d) Capacity-building
16.28. Relevant institutions will need to have the responsibility for undertaking, and the capacity (political, financial and workforce) to undertake, the above-mentioned activities and to be dynamic in response to new biotechnological developments (see programme area E).

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* See paras. 16.23-16.25 above.

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D. Enhancing safety and developing international mechanisms for cooperation

Basis for action

16.29. There is a need for further development of internationally agreed principles on risk assessment and management of all aspects of biotechnology, which should build upon those developed at the national level. Only when adequate and transparent safety and border-control procedures are in place will the community at large be able to derive maximum benefit from, and be in a much better position to accept the potential benefits and risks of, biotechnology. Several fundamental principles could underlie many of these safety procedures, including primary consideration of the organism, building on the principle of familiarity, applied in a flexible framework, taking into account national requirements and recognizing that the logical progression is to start with a step-by-step and case-by-case approach, but also recognizing that experience has shown that in many instances a more comprehensive approach should be used, based on the experiences of the first period, leading, inter alia, to streamlining and categorizing; complementary consideration of risk assessment and risk management; and classification into contained use or release to the environment.

Objectives

16.30. The aim of this programme area is to ensure safety in biotechnology development, application, exchange and transfer through international agreement on principles to be applied on risk assessment and management, with particular reference to health and environmental considerations, including the widest possible public participation and taking account of ethical considerations.

Activities

16.31. The proposed activities for this programme area call for close international cooperation. They should build upon planned or existing activities to accelerate the environmentally sound application of biotechnology, especially in developing countries.

(a) Management-related activities

16.32. Governments at the appropriate level, with the support of relevant international and regional organizations, the private sector, non-governmental organizations and academic and scientific institutions, should:

a. Make the existing safety procedures widely available by collecting the existing information and adapting it to the specific needs of different countries and regions;

b. Further develop, as necessary, the existing safety procedures to promote scientific development and categorization in the areas of risk assessment and risk management (information requirements; databases; procedures for assessing risks and conditions of release; establishment of safety conditions; monitoring and inspections, taking account of ongoing national, regional and international initiatives and avoiding duplication wherever possible);

c. Compile, update and develop compatible safety procedures into a framework of internationally agreed principles as a basis for guidelines to be applied on safety in biotechnology, including consideration of the need for and feasibility of an international agreement, and promote information exchange as a basis for further development, drawing on the work already undertaken by international or other expert bodies;

d. Undertake training programmes at the national and regional levels on the application of the proposed technical guidelines;

e. Assist in exchanging information about the procedures required for safe handling and risk management and about the conditions of release of the products of biotechnology, and cooperate in providing immediate assistance in cases of emergencies that may arise in conjunction with the use of biotechnology products.

(b) Data and information*

(c) International and regional cooperation and coordination

16.33. Governments at the appropriate level, with the support of the relevant international and regional organizations, should raise awareness of the relative benefits and risks of biotechnology.

16.34. Further activities should include the following (see also para. 16.32):

a. Organizing one or more regional meetings between countries to identify further practical steps to facilitate international cooperation in bio-safety;

b. Establishing an international network incorporating national, regional and global contact points;

c. Providing direct assistance upon request through the international network, using information networks, databases and information procedures;

d. Considering the need for and feasibility of internationally agreed guidelines on safety in biotechnology releases, including risk assessment and risk management, and considering studying the feasibility of guidelines which could facilitate national legislation on liability and compensation.

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* See paras. 16.32 and 16.33.

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Means of implementation

(a) Financing and cost evaluation

16.35. The UNCED secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programmes to be about $2 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means*

(c) Human resource development*

(d) Capacity-building

16.36. Adequate international technical and financial assistance should be provided and technical cooperation to developing countries facilitated in order to build up technical, managerial, planning and administrative capacities at the national level to support the activities in this programme area (see also programme area E).

E. Establishing enabling mechanisms for the development and the environmentally sound application of biotechnology

Basis for action

16.37. The accelerated development and application of biotechnologies, particularly in developing countries, will require a major effort to build up institutional capacities at the national and regional levels. In developing countries, enabling factors such as training capacity, know-how, research and development facilities and funds, industrial building capacity, capital (including venture capital) protection of intellectual property rights, and expertise in areas including marketing research, technology assessment, socio-economic assessment and safety assessment are frequently inadequate. Efforts will therefore need to be made to build up capacities in these and other areas and to match such efforts with appropriate levels of financial support. There is therefore a need to strengthen the endogenous capacities of developing countries by means of new international initiatives to support research in order to speed up the development and application of both new and conventional biotechnologies to serve the needs of sustainable development at the local, national and regional levels. National mechanisms to allow for informed comment by the public with regard to biotechnology research and application should be part of the process.

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* See para. 16.32.

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16.38. Some activities at the national, regional and global levels already address the issues outlined in programme areas A, B, C and D, as well as the provisioin of advice to individual countries on the development of national guidelines and systems for the implementation of those guidelines. These activities are generally uncoordinated, however, involving many different organizations, priorities, constituencies, time-scales, funding sources and resource constraints. There is a need for a much more cohesive and coordinated approach to harness available resources in the most effective manner. As with most new technologies, research in biotechnology and the application of its findings could have significant positive and negative socio-economic as well as cultural impacts. These impacts should be carefully identified in the earliest phases of the development of biotechnology in order to enable appropriate management of the consequences of transferring biotechnology.

Objectives

16.39. The objectives are as follows:

a. To promote the development and application of biotechnologies, with special emphasis on developing countries, by:

    i. Enhancing existing efforts at the national, regional and global levels;

    ii. Providing the necessary support for biotechnology, particularly research and product development, at the national, regional and international levels;

    iii. Raising public awareness regarding the relative beneficial aspects of and risks related to biotechnology, to contribute to sustainable development;

    iv. Helping to create a favourable climate for investments, industrial capacity-building and distribution/marketing;

    v. Encouraging the exchange of scientists among all countries and discouraging the "brain drain";

    vi. Recognizing and fostering the traditional methods and knowledge of indigenous peoples and their communities and ensuring the opportunity for their participation in the economic and commercial benefits arising from developments in biotechnology; 9/

b. To identify ways and means of enhancing current efforts, building wherever possible on existing enabling mechanisms, particularly regional, to determine the precise nature of the needs for additional initiatives, particularly in respect of developing countries, and to develop appropriate response strategies, including proposals for any new international mechanisms;

c. To establish or adapt appropriate mechanisms for safety appraisal and risk assessment at the local, regional and international levels, as appropriate.

Activities

(a) Management-related activities

16.40. Governments at the appropriate level, with the support of international and regional organizations, the private sector, non-governmental organizations and academic and scientific institutions, should:

a. Develop policies and mobilize additional resources to facilitate greater access to the new biotechnologies, particularly by and among developing countries;

b. Implement programmes to create greater awareness of the potential and relative benefits and risks of the environmentally sound application of biotechnology among the public and key decision makers;

c. Undertake an urgent review of existing enabling mechanisms, programmes and activities at the national, regional and global levels to identify strengths, weaknesses and gaps, and to assess the priority needs of developing countries;

d. Undertake an urgent follow-up and critical review to identify ways and means of strengthening endogenous capacities within and among developing countries for the environmentally sound application of biotechnology, including, as a first step, ways to improve existing mechanisms, particularly at the regional level, and, as a subsequent step, the consideration of possible new international mechanisms, such as regional biotechnology centres;

e. Develop strategic plans for overcoming targeted constraints by means of appropriate research, product development and marketing;

f. Establish additional quality-assurance standards for biotechnology applications and products, where necessary.

(b) Data and information

16.40. The following activities should be undertaken: facilitation of access to existing information dissemination systems, especially among developing countries; improvement of such access where appropriate; and consideration of the development of a directory of information.

(c) International and regional cooperation and coordination

16.41. Governments at the appropriate level, with the assistance of international and regional organizations, should develop appropriate new initiatives to identify priority areas for research based on specific problems and facilitate access to new biotechnologies, particularly by and among developing countries, among relevant undertakings within those countries, in order to strengthen endogenous capacities and to support the building of research and institutional capacity in those countries.

Means of implementation

(a) Financing and cost evaluation

16.42. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $5 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

16.43. Workshops, symposia, seminars and other exchanges among the scientific community at the regional and global levels, on specific priority themes, will need to be organized, making full use of the existing scientific and technological manpower in each country for bringing about such exchanges.

(c) Human resource development

16.44. Personnel development needs will need to be identified and additional training programmes developed at the national, regional and global levels, especially in developing countries. These should be supported by increased training at all levels, graduate, postgraduate and post-doctoral, as well as by the training of technicians and support staff, with particular reference to the generation of trained manpower in consultant services, design, engineering and marketing research. Training programmes for lecturers training scientists and technologists in advanced research institutions in different countries throughout the world will also need to be developed, and systems giving appropriate rewards, incentives and recognition to scientists and technologists will need to be instituted (see para. 16.44). Conditions of service will also need to be improved at the national level in developing countries to encourage and nurture trained manpower with a view to retaining that manpower locally. Society should be informed of the social and cultural impact of the development and application of biotechnology.

(d) Capacity-building

16.45. Biotechnology research and development is undertaken both under highly sophisticated conditions and at the practical level in many countries. Efforts will be needed to ensure that the necessary infrastructure facilities for research, extension and technology activities are available on a decentralized basis. Global and regional collaboration for basic and applied research and development will also need to be further enhanced and every effort should be made to ensure that existing national and regional facilities are fully utilized. Such institutions already exist in some countries and it should be possible to make use of them for training purposes and joint research projects. Strengthening of universities, technical schools and local research institutions for the development of biotechnologies and extension services for their application will need to be developed, especially in developing countries.

Agenda 21 – Chapter 17

PROTECTION OF THE OCEANS, ALL KINDS OF SEAS, INCLUDING ENCLOSED AND SEMI-ENCLOSED SEAS, AND COASTAL AREAS AND THE PROTECTION, RATIONAL USE AND DEVELOPMENT OF THEIR LIVING RESOURCES

17.1. The marine environment - including the oceans and all seas and adjacent coastal areas - forms an integrated whole that is an essential component of the global life-support system and a positive asset that presents opportunities for sustainable development. International law, as reflected in the provisions of the United Nations Convention on the Law of the Sea 1/, 2/ referred to in this chapter of Agenda 21, sets forth rights and obligations of States and provides the international basis upon which to pursue the protection and sustainable development of the marine and coastal environment and its resources. This requires new approaches to marine and coastal area management and development, at the national, subregional, regional and global levels, approaches that are integrated in content and are precautionary and anticipatory in ambit, as reflected in the following programme areas: 3/

a. Integrated management and sustainable development of coastal areas, including exclusive economic zones;

b. Marine environmental protection;

c. Sustainable use and conservation of marine living resources of the high seas;

d. Sustainable use and conservation of marine living resources under national jurisdiction;

e. Addressing critical uncertainties for the management of the marine environment and climate change;

f. Strengthening international, including regional, cooperation and coordination;

g. Sustainable development of small islands.

17.2. The implementation by developing countries of the activities set forth below shall be commensurate with their individual technological and financial capacities and priorities in allocating resources for development needs and ultimately depends on the technology transfer and financial resources required and made available to them.

PROGRAMME AREAS

A. Integrated management and sustainable development of coastal and marine areas, including exclusive economic zones

Basis for action

17.3. The coastal area contains diverse and productive habitats important for human settlements, development and local subsistence. More than half the world's population lives within 60 km of the shoreline, and this could rise to three quarters by the year 2020. Many of the world's poor are crowded in coastal areas. Coastal resources are vital for many local communities and indigenous people. The exclusive economic zone (EEZ) is also an important marine area where the States manage the development and conservation of natural resources for the benefit of their people. For small island States or countries, these are the areas most available for development activities.

17.4. Despite national, subregional, regional and global efforts, current approaches to the management of marine and coastal resources have not always proved capable of achieving sustainable development, and coastal resources and the coastal environment are being rapidly degraded and eroded in many parts of the world.

Objectives

17.5. Coastal States commit themselves to integrated management and sustainable development of coastal areas and the marine environment under their national jurisdiction. To this end, it is necessary to, inter alia:

a. Provide for an integrated policy and decision-making process, including all involved sectors, to promote compatibility and a balance of uses;

b. Identify existing and projected uses of coastal areas and their interactions;

c. Concentrate on well-defined issues concerning coastal management;

d. Apply preventive and precautionary approaches in project planning and implementation, including prior assessment and systematic observation of the impacts of major projects;

e. Promote the development and application of methods, such as national resource and environmental accounting, that reflect changes in value resulting from uses of coastal and marine areas, including pollution, marine erosion, loss of resources and habitat destruction;

f. Provide access, as far as possible, for concerned individuals, groups and organizations to relevant information and opportunities for consultation and participation in planning and decision-making at appropriate levels.

Activities

(a) Management-related activities

17.6. Each coastal State should consider establishing, or where necessary strengthening, appropriate coordinating mechanisms (such as a high-level policy planning body) for integrated management and sustainable development of coastal and marine areas and their resources, at both the local and national levels. Such mechanisms should include consultation, as appropriate, with the academic and private sectors, non-governmental organizations, local communities, resource user groups, and indigenous people. Such national coordinating mechanisms could provide, inter alia, for:

a. Preparation and implementation of land and water use and siting policies;

b. Implementation of integrated coastal and marine management and sustainable development plans and programmes at appropriate levels;

c. Preparation of coastal profiles identifying critical areas, including eroded zones, physical processes, development patterns, user conflicts and specific priorities for management;

d. Prior environmental impact assessment, systematic observation and follow-up of major projects, including the systematic incorporation of results in decision-making;

e. Contingency plans for human induced and natural disasters, including likely effects of potential climate change and sealevel rise, as well as contingency plans for degradation and pollution of anthropogenic origin, including spills of oil and other materials;

f. Improvement of coastal human settlements, especially in housing, drinking water and treatment and disposal of sewage, solid wastes and industrial effluents;

g. Periodic assessment of the impacts of external factors and phenomena to ensure that the objectives of integrated management and sustainable development of coastal areas and the marine environment are met;

h. Conservation and restoration of altered critical habitats;

i. Integration of sectoral programmes on sustainable development for settlements, agriculture, tourism, fishing, ports and industries affecting the coastal area;

j. Infrastructure adaptation and alternative employment;

k. Human resource development and training;

l. Public education, awareness and information programmes;

m. Promoting environmentally sound technology and sustainable practices;

n. Development and simultaneous implementation of environmental quality criteria.

17.7. Coastal States, with the support of international organizations, upon request, should undertake measures to maintain biological diversity and productivity of marine species and habitats under national jurisdiction. Inter alia, these measures might include: surveys of marine biodiversity, inventories of endangered species and critical coastal and marine habitats; establishment and management of protected areas; and support of scientific research and dissemination of its results.

(b) Data and information

17.8. Coastal States, where necessary, should improve their capacity to collect, analyse, assess and use information for sustainable use of resources, including environmental impacts of activities affecting the coastal and marine areas. Information for management purposes should receive priority support in view of the intensity and magnitude of the changes occurring in the coastal and marine areas. To this end, it is necessary to, inter alia:

a. Develop and maintain databases for assessment and management of coastal areas and all seas and their resources;

b. Develop socio-economic and environmental indicators;

c. Conduct regular environmental assessment of the state of the environment of coastal and marine areas;

d. Prepare and maintain profiles of coastal area resources, activities, uses, habitats and protected areas based on the criteria of sustainable development;

e. Exchange information and data.

17.9. Cooperation with developing countries, and, where applicable, subregional and regional mechanisms, should be strengthened to improve their capacities to achieve the above.

(c) International and regional cooperation and coordination

17.10. The role of international cooperation and coordination on a bilateral basis and, where applicable, within a subregional, interregional, regional or global framework, is to support and supplement national efforts of coastal States to promote integrated management and sustainable development of coastal and marine areas.

17.11. States should cooperate, as appropriate, in the preparation of national guidelines for integrated coastal zone management and development, drawing on existing experience. A global conference to exchange experience in the field could be held before 1994.

Means of implementation

(a) Financing and cost evaluation

17.12. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $6 billion including about $50 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

17.13. States should cooperate in the development of necessary coastal systematic observation, research and information management systems. They should provide access to and transfer environmentally safe technologies and methodologies for sustainable development of coastal and marine areas to developing countries. They should also develop technologies and endogenous scientific and technological capacities.

17.14. International organizations, whether subregional, regional or global, as appropriate, should support coastal States, upon request, in these efforts, as indicated above, devoting special attention to developing countries.

(c) Human resource development

17.15. Coastal States should promote and facilitate the organization of education and training in integrated coastal and marine management and sustainable development for scientists, technologists, managers (including community-based managers) and users, leaders, indigenous peoples, fisherfolk, women and youth, among others. Management and development, as well as environmental protection concerns and local planning issues, should be incorporated in educational curricula and public awareness campaigns, with due regard to traditional ecological knowledge and socio-cultural values.

17.16. International organizations, whether subregional, regional or global, as appropriate, should support coastal States, upon request, in the areas indicated above, devoting special attention to developing countries.

(d) Capacity-building

17.17. Full cooperation should be extended, upon request, to coastal States in their capacity-building efforts and, where appropriate, capacity-building should be included in bilateral and multilateral development cooperation. Coastal States may consider, inter alia:

a. Ensuring capacity-building at the local level;

b. Consulting on coastal and marine issues with local administrations, the business community, the academic sector, resource user groups and the general public;

c. Coordinating sectoral programmes while building capacity;

d. Identifying existing and potential capabilities, facilities and needs for human resources development and scientific and technological infrastructure;

e. Developing scientific and technological means and research;

f. Promoting and facilitating human resource development and education;

g. Supporting "centres of excellence" in integrated coastal and marine resource management;

h. Supporting pilot demonstration programmes and projects in integrated coastal and marine management.

B. Marine environmental protection

Basis for action

17.18. Degradation of the marine environment can result from a wide range of sources. Land-based sources contribute 70 per cent of marine pollution, while maritime transport and dumping-at-sea activities contribute 10 per cent each. The contaminants that pose the greatest threat to the marine environment are, in variable order of importance and depending on differing national or regional situations, sewage, nutrients, synthetic organic compounds, sediments, litter and plastics, metals, radionuclides, oil/hydrocarbons and polycyclic aromatic hydrocarbons (PAHs). Many of the polluting substances originating from land-based sources are of particular concern to the marine environment since they exhibit at the same time toxicity, persistence and bioaccumulation in the food chain. There is currently no global scheme to address marine pollution from land-based sources.

17.19. Degradation of the marine environment can also result from a wide range of activities on land. Human settlements, land use, construction of coastal infrastructure, agriculture, forestry, urban development, tourism and industry can affect the marine environment. Coastal erosion and siltation are of particular concern.

17.20. Marine pollution is also caused by shipping and sea-based activities. Approximately 600,000 tons of oil enter the oceans each year as a result of normal shipping operations, accidents and illegal discharges. With respect to offshore oil and gas activities, currently machinery space discharges are regulated internationally and six regional conventions to control platform discharges have been under consideration. The nature and extent of environmental impacts from offshore oil exploration and production activities generally account for a very small proportion of marine pollution.

17.21. A precautionary and anticipatory rather than a reactive approach is necessary to prevent the degradation of the marine environment. This requires, inter alia, the adoption of precautionary measures, environmental impact assessments, clean production techniques, recycling, waste audits and minimization, construction and/or improvement of sewage treatment facilities, quality management criteria for the proper handling of hazardous substances, and a comprehensive approach to damaging impacts from air, land and water. Any management framework must include the improvement of coastal human settlements and the integrated management and development of coastal areas.

Objectives

17.22. States, in accordance with the provisions of the United Nations Convention on the Law of the Sea on protection and preservation of the marine environment, commit themselves, in accordance with their policies, priorities and resources, to prevent, reduce and control degradation of the marine environment so as to maintain and improve its life-support and productive capacities. To this end, it is necessary to:

a. Apply preventive, precautionary and anticipatory approaches so as to avoid degradation of the marine environment, as well as to reduce the risk of long-term or irreversible adverse effects upon it;

b. Ensure prior assessment of activities that may have significant adverse impacts upon the marine environment;

c. Integrate protection of the marine environment into relevant general environmental, social and economic development policies;

d. Develop economic incentives, where appropriate, to apply clean technologies and other means consistent with the internalization of environmental costs, such as the polluter pays principle, so as to avoid degradation of the marine environment;

e. Improve the living standards of coastal populations, particularly in developing countries, so as to contribute to reducing the degradation of the coastal and marine environment.

17.23. States agree that provision of additional financial resources, through appropriate international mechanisms, as well as access to cleaner technologies and relevant research, would be necessary to support action by developing countries to implement this commitment.

Activities

(a) Management-related activities

Prevention, reduction and control of degradation of the marine environment from land-based activities

17.24. In carrying out their commitment to deal with degradation of the marine environment from land-based activities, States should take action at the national level and, where appropriate, at the regional and subregional levels, in concert with action to implement programme area A, and should take account of the Montreal Guidelines for the Protection of the Marine Environment from Land-Based Sources.

17.25. To this end, States, with the support of the relevant international environmental, scientific, technical and financial organizations, should cooperate, inter alia, to:

a. Consider updating, strengthening and extending the Montreal Guidelines, as appropriate;

b. Assess the effectiveness of existing regional agreements and action plans, where appropriate, with a view to identifying means of strengthening action, where necessary, to prevent, reduce and control marine degradation caused by land-based activities;

c. Initiate and promote the development of new regional agreements, where appropriate;

d. Develop means of providing guidance on technologies to deal with the major types of pollution of the marine environment from land-based sources, according to the best scientific evidence;

e. Develop policy guidance for relevant global funding mechanisms;

f. Identify additional steps requiring international cooperation.

17.26. The UNEP Governing Council is invited to convene, as soon as practicable, an intergovernmental meeting on protection of the marine environment from land-based activities.

17.27. As concerns sewage, priority actions to be considered by States may include:

a. Incorporating sewage concerns when formulating or reviewing coastal development plans, including human settlement plans;

b. Building and maintaining sewage treatment facilities in accordance with national policies and capacities and international cooperation available;

c. Locating coastal outfalls so as to maintain an acceptable level of environmental quality and to avoid exposing shell fisheries, water intakes and bathing areas to pathogens;

d. Promoting environmentally sound co-treatments of domestic and compatible industrial effluents, with the introduction, where practicable, of controls on the entry of effluents that are not compatible with the system;

e. Promoting primary treatment of municipal sewage discharged to rivers, estuaries and the sea, or other solutions appropriate to specific sites;

f. Establishing and improving local, national, subregional and regional, as necessary, regulatory and monitoring programmes to control effluent discharge, using minimum sewage effluent guidelines and water quality criteria and giving due consideration to the characteristics of receiving bodies and the volume and type of pollutants.

17.28. As concerns other sources of pollution, priority actions to be considered by States may include:

a. Establishing or improving, as necessary, regulatory and monitoring programmes to control effluent discharges and emissions, including the development and application of control and recycling technologies;

b. Promoting risk and environmental impact assessments to help ensure an acceptable level of environmental quality;

c. Promoting assessment and cooperation at the regional level, where appropriate, with respect to the input of point source pollutants from new installations;

d. Eliminating the emission or discharge of organohalogen compounds that threaten to accumulate to dangerous levels in the marine environment;

e. Reducing the emission or discharge of other synthetic organic compounds that threaten to accumulate to dangerous levels in the marine environment;

f. Promoting controls over anthropogenic inputs of nitrogen and phosphorus that enter coastal waters where such problems as eutrophication threaten the marine environment or its resources;

g. Cooperating with developing countries, through financial and technological support, to maximize the best practicable control and reduction of substances and wastes that are toxic, persistent or liable to bio-accumulate and to establish environmentally sound land-based waste disposal alternatives to sea dumping;

h. Cooperating in the development and implementation of environmentally sound land-use techniques and practices to reduce run-off to water-courses and estuaries which would cause pollution or degradation of the marine environment;

i. Promoting the use of environmentally less harmful pesticides and fertilizers and alternative methods for pest control, and considering the prohibition of those found to be environmentally unsound;

j. Adopting new initiatives at national, subregional and regional levels for controlling the input of non-point source pollutants, which require broad changes in sewage and waste management, agricultural practices, mining, construction and transportation.

17.29. As concerns physical destruction of coastal and marine areas causing degradation of the marine environment, priority actions should include control and prevention of coastal erosion and siltation due to anthropogenic factors related to, inter alia, land-use and construction techniques and practices. Watershed management practices should be promoted so as to prevent, control and reduce degradation of the marine environment.

Prevention, reduction and control of degradation of the marine environment from sea-based activities

17.30. States, acting individually, bilaterally, regionally or multilaterally and within the framework of IMO and other relevant international organizations, whether subregional, regional or global, as appropriate, should assess the need for additional measures to address degradation of the marine environment:

a. From shipping, by:

i. Supporting wider ratification and implementation of relevant shipping conventions and protocols;

ii. Facilitating the processes in (i), providing support to individual States upon request to help them overcome the obstacles identified by them;

- iii. Cooperating in monitoring marine pollution from ships, especially from illegal discharges (e.g., aerial surveillance), and enforcing MARPOL discharge, provisions more rigorously;
- iv.)Assessing the state of pollution caused by ships in particularly sensitive areas identified by IMO and taking action to implement applicable measures, where necessary, within such areas to ensure compliance with generally accepted international regulations;
- v. Taking action to ensure respect of areas designated by coastal States, within their exclusive economic zones, consistent with international law, in order to protect and preserve rare or fragile ecosystems, such as coral reefs and mangroves;
- vi. Considering the adoption of appropriate rules on ballast water discharge to prevent the spread of non-indigenous organisms;
- vii. Promoting navigational safety by adequate charting of coasts and ship-routing, as appropriate;
- viii. Assessing the need for stricter international regulations to further reduce the risk of accidents and pollution from cargo ships (including bulk carriers);
- ix. Encouraging IMO and IAEA to work together to complete consideration of a code on the carriage of irradiated nuclear fuel in flasks on board ships;
- x. Revising and updating the IMO Code of Safety for Nuclear Merchant Ships and considering how best to implement a revised code;
- xi. Supporting the ongoing activity within IMO regarding development of appropriate measures for reducing air pollution from ships;
- xii. Supporting the ongoing activity within IMO regarding the development of an international regime governing the transportation of hazardous and noxious substances carried by ships and further considering whether the compensation funds similar to the ones established under the Fund Convention would be appropriate in respect of pollution damage caused by substances other than oil;

b. From dumping, by:

- i. Supporting wider ratification, implementation and participation in relevant Conventions on dumping at sea, including early conclusion of a future strategy for the London Dumping Convention;
- ii. Encouraging the London Dumping Convention parties to take appropriate steps to stop ocean dumping and incineration of hazardous substances;

c. From offshore oil and gas platforms, by assessing existing regulatory measures to address discharges, emissions and safety and assessing the need for additional measures;

d. From ports, by facilitating establishment of port reception facilities for the collection of oily and chemical residues and garbage from ships, especially in MARPOL special areas, and promoting the establishment of smaller scale facilities in marinas and fishing harbours.

17.31. IMO and as appropriate, other competent United Nations organizations, when requested by the States concerned, should assess, where appropriate, the state of marine pollution in areas of congested shipping, such as heavily used international straits, with a view to ensuring compliance with generally accepted international regulations, particularly those related to illegal discharges from ships, in accordance with the provisions of Part III of the United Nations Convention on the Law of the Sea.

17.32. States should take measures to reduce water pollution caused by organotin compounds used in anti-fouling paints.

17.33. States should consider ratifying the Convention on Oil Pollution Preparedness, Response and Cooperation, which addresses, inter alia, the development of contingency plans on the national and international level, as appropriate, including provision of oil-spill response material and training of personnel, including its possible extension to chemical spill response.

17.34. States should intensify international cooperation to strengthen or establish, where necessary, regional oil/chemical-spill response centres and/or, as appropriate, mechanisms in cooperation with relevant subregional, regional or global intergovernmental organizations and, where appropriate, industry-based organizations.

(b) Data and information

17.35. States should, as appropriate, and in accordance with the means at their disposal and with due regard for their technical and scientific capacity and resources, make systematic observations on the state of the marine environment. To this end, States should, as appropriate, consider:

a. Establishing systematic observation systems to measure marine environmental quality, including causes and effects of marine degradation, as a basis for management;

b. Regularly exchanging information on marine degradation caused by land-based and sea-based activities and on actions to prevent, control and reduce such degradation;

c. Supporting and expanding international programmes for systematic observations such as the mussel watch programme, building on existing facilities with special attention to developing countries;

d. Establishing a clearing-house on marine pollution control information, including processes and technologies to address marine pollution control and to support their transfer to developing countries and other countries with demonstrated needs;

e. Establishing a global profile and database providing information on the sources, types, amounts and effects of pollutants reaching the marine environment from land-based activities in coastal areas and sea-based sources;

f. Allocating adequate funding for capacity-building and training programmes to ensure the full participation of developing countries, in particular, in any international scheme under the organs and organizations of the United Nations system for the collection, analysis and use of data and information.

Means of implementation

(a) Financing and cost evaluation

17.36. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $200 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

17.37. National, subregional and regional action programmes will, where appropriate, require technology transfer, in conformity with chapter 34, and financial resources, particularly where developing countries are concerned, including:

a. Assistance to industries in identifying and adopting clean production or cost-effective pollution control technologies;

b. Planning development and application of low-cost and low-maintenance sewage installation and treatment technologies for developing countries;

c. Equipment of laboratories to observe systematically human and other impacts on the marine environment;

d. Identification of appropriate oil- and chemical-spill control materials, including low-cost locally available materials and techniques, suitable for pollution emergencies in developing countries;

e. Study of the use of persistent organohalogens that are liable to accumulate in the marine environment to identify those that cannot be adequately controlled and to provide a basis for a decision on a time schedule for phasing them out as soon as practicable;

f. Establishment of a clearing-house for information on marine pollution control, including processes and technologies to address marine pollution control, and support for their transfer to developing and other countries with demonstrated needs.

(c) Human resource development

17.38. States individually or in cooperation with each other and with the support of international organizations, whether subregional, regional or global, as appropriate, should:

a. Provide training for critical personnel required for the adequate protection of the marine environment as identified by training needs' surveys at the national, regional or subregional levels;

b. Promote the introduction of marine environmental protection topics into the curriculum of marine studies programmes;

c. Establish training courses for oil- and chemical-spill response personnel, in cooperation, where appropriate, with the oil and chemical industries;

d. Conduct workshops on environmental aspects of port operations and development;

e. Strengthen and provide secure financing for new and existing specialized international centres of professional maritime education;

f. States should, through bilateral and multilateral cooperation, support and supplement the national efforts of developing countries as regards human resource development in relation to prevention and reduction of degradation of the marine environment.

(d) Capacity-building

17.39. National planning and coordinating bodies should be given the capacity and authority to review all land-based activities and sources of pollution for their impacts on the marine environment and to propose appropriate control measures.

17.40. Research facilities should be strengthened or, where appropriate, developed in developing countries for systematic observation of marine pollution, environmental impact assessment and development of control recommendations and should be managed and staffed by local experts.

17.41. Special arrangements will be needed to provide adequate financial and technical resources to assist developing countries in preventing and solving problems associated with activities that threaten the marine environment.

17.42. An international funding mechanism should be created for the application of appropriate sewage treatment technologies and building sewage treatment facilities, including grants or concessional loans from international agencies and appropriate regional funds, replenished at least in part on a revolving basis by user fees.

17.43. In carrying out these programme activities, particular attention needs to be given to the problems of developing countries that would bear an unequal burden because of their lack of facilities, expertise or technical capacities.

C. Sustainable use and conservation of marine living resources of the high seas

Basis for action

17.44. Over the last decade, fisheries on the high seas have considerably expanded and currently represent approximately 5 per cent of total world landings. The provisions of the United Nations Convention on the Law of the Sea on the marine living resources of the high seas sets forth rights and obligations of States with respect to conservation and utilization of those resources.

17.45. However, management of high seas fisheries, including the adoption, monitoring and enforcement of effective conservation measures, is inadequate in many areas and some resources are overutilized. There are problems of unregulated fishing, overcapitalization, excessive fleet size, vessel reflagging to escape controls, insufficiently selective gear, unreliable databases and lack of sufficient cooperation between States. Action by States whose nationals and vessels fish on the high seas, as well as cooperation at the bilateral, subregional, regional and global levels, is essential particularly for highly migratory species and straddling stocks. Such action and cooperation should address inadequacies in fishing practices, as well as in biological knowledge, fisheries statistics and improvement of systems for handling data. Emphasis should also be on multi-species management and other approaches that take into account the relationships among species, especially in addressing depleted species, but also in identifying the potential of underutilized or unutilized populations.

Objectives

17.46. States commit themselves to the conservation and sustainable use of marine living resources on the high seas. To this end, it is necessary to:

a. Develop and increase the potential of marine living resources to meet human nutritional needs, as well as social, economic and development goals;

b. Maintain or restore populations of marine species at levels that can produce the maximum sustainable yield as qualified by relevant environmental and economic factors, taking into consideration relationships among species;

c. Promote the development and use of selective fishing gear and practices that minimize waste in the catch of target species and minimize by-catch of non-target species;

d. Ensure effective monitoring and enforcement with respect to fishing activities;

e. Protect and restore endangered marine species;

f. Preserve habitats and other ecologically sensitive areas;

g. Promote scientific research with respect to the marine living resources in the high seas.

17.47. Nothing in paragraph 17.46 above restricts the right of a State or the competence of an international organization, as appropriate, to prohibit, limit or regulate the exploitation of marine mammals on the high seas more strictly than provided for in that paragraph. States shall cooperate with a view to the conservation of marine mammals and, in the case of cetaceans, shall in particular work through the appropriate international organizations for their conservation, management and study.

17.48. The ability of developing countries to fulfil the above objectives is dependent upon their capabilities, including the financial, scientific and technological means at their disposal. Adequate financial, scientific and technological cooperation should be provided to support action by them to implement these objectives.

Activities

(a) Management-related activities

17.49. States should take effective action, including bilateral and multilateral cooperation, where appropriate at the subregional, regional and global levels, to ensure that high seas fisheries are managed in accordance with the provisions of the United Nations Convention on the Law of the Sea. In particular, they should:

a. Give full effect to these provisions with regard to fisheries populations whose ranges lie both within and beyond exclusive economic zones (straddling stocks);

b. Give full effect to these provisions with regard to highly migratory species;

c. Negotiate, where appropriate, international agreements for the effective management and conservation of fishery stocks;

d. Define and identify appropriate management units;

e. States should convene, as soon as possible, an intergovernmental conference under United Nations auspices, taking into account relevant activities at the subregional, regional and global levels, with a view to promoting effective implementation of the provisions of the United Nations

Convention on the Law of the Sea on straddling fish stocks and highly migratory fish stocks. The conference, drawing, inter alia, on scientific and technical studies by FAO, should identify and assess existing problems related to the conservation and management of such fish stocks, and consider means of improving cooperation on fisheries among States, and formulate appropriate recommendations. The work and the results of the conference should be fully consistent with the provisions of the United Nations Convention on the Law of the Sea, in particular the rights and obligations of coastal States and States fishing on the high seas.

17.50. States should ensure that fishing activities by vessels flying their flags on the high seas take place in a manner so as to minimize incidental catch.

17.51. States should take effective action consistent with international law to monitor and control fishing activities by vessels flying their flags on the high seas to ensure compliance with applicable conservation and management rules, including full, detailed, accurate and timely reporting of catches and effort.

17.52. States should take effective action, consistent with international law, to deter reflagging of vessels by their nationals as a means of avoiding compliance with applicable conservation and management rules for fishing activities on the high seas.

17.53. States should prohibit dynamiting, poisoning and other comparable destructive fishing practices.

17.54. States should fully implement General Assembly resolution 46/215 on large-scale pelagic drift-net fishing.

17.55. States should take measures to increase the availability of marine living resources as human food by reducing wastage, post-harvest losses and discards, and improving techniques of processing, distribution and transportation.

(b) Data and information

17.56. States, with the support of international organizations, whether subregional, regional or global, as appropriate, should cooperate to:

a. Promote enhanced collection of data necessary for the conservation and sustainable use of the marine living resources of the high seas;

b. Exchange on a regular basis up-to-date data and information adequate for fisheries assessment;

c. Develop and share analytical and predictive tools, such as stock assessment and bioeconomic models;

d. Establish or expand appropriate monitoring and assessment programmes.

(c) International and regional cooperation and coordination

17.57. States, through bilateral and multilateral cooperation and within the framework of subregional and regional fisheries bodies, as appropriate, and with the support of other international intergovernmental agencies, should assess high seas resource potentials and develop profiles of all stocks (target and non-target).

17.58. States should, where and as appropriate, ensure adequate coordination and cooperation in enclosed and semi-enclosed seas and between subregional, regional and global intergovernmental fisheries bodies.

17.59. Effective cooperation within existing subregional, regional or global fisheries bodies should be encouraged. Where such organizations do not exist, States should, as appropriate, cooperate to establish such organizations.

17.60. States with an interest in a high seas fishery regulated by an existing subregional and/or regional high seas fisheries organization of which they are not members should be encouraged to join that organization, where appropriate.

17.61. States recognize:

a. The responsibility of the International Whaling Commission for the conservation and management of whale stocks and the regulation of whaling pursuant to the 1946 International Convention for the Regulation of Whaling;

b. The work of the International Whaling Commission Scientific Committee in carrying out studies of large whales in particular, as well as of other cetaceans;

c. The work of other organizations, such as the Inter-American Tropical Tuna Commission and the Agreement on Small Cetaceans in the Baltic and North Sea under the Bonn Convention, in the conservation, management and study of cetaceans and other marine mammals.

17.62. States should cooperate for the conservation, management and study of cetaceans.

Means of implementation

(a) Financing and cost evaluation

17.63. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $12 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

17.64. States, with the support of relevant international organizations, where necessary, should develop collaborative technical and research programmes to improve understanding of the life cycles and migrations of species found on the high seas, including identifying critical areas and life stages.

17.65. States, with the support of relevant international organizations, whether subregional, regional or global, as appropriate, should:

a. Develop databases on the high seas marine living resources and fisheries;

b. Collect and correlate marine environmental data with high seas marine living resources data, including the impacts of regional and global changes brought about by natural causes and by human activities;

c. Cooperate in coordinating research programmes to provide the knowledge necessary to manage high seas resources.

(c) Human resource development

17.66. Human resource development at the national level should be targeted at both development and management of high seas resources, including training in high seas fishing techniques and in high seas resource assessment, strengthening cadres of personnel to deal with high seas resource management and conservation and related environmental issues, and training observers and inspectors to be placed on fishing vessels.

(d) Capacity-building

17.67. States, with the support, where appropriate, of relevant international organizations, whether subregional, regional or global, should cooperate to develop or upgrade systems and institutional structures for monitoring, control and surveillance, as well as the research capacity for assessment of marine living resource populations.

17.68. Special support, including cooperation among States, will be needed to enhance the capacities of developing countries in the areas of data and information, scientific and technological means, and human resource development in order to participate effectively in the conservation and sustainable utilization of high seas marine living resources.

D. Sustainable use and conservation of marine living resources under national jurisdiction

Basis for action

17.69. Marine fisheries yield 80 to 90 million tons of fish and shellfish per year, 95 per cent of which is taken from waters under national jurisdiction. Yields have increased nearly fivefold over the past four decades. The provisions of the United Nations Convention on the Law of the Sea on marine living resources of the exclusive economic zone and other areas under national jurisdiction set forth rights and obligations of States with respect to conservation and utilization of those resources.

17.70. Marine living resources provide an important source of protein in many countries and their use is often of major importance to local communities and indigenous people. Such resources provide food and livelihoods to millions of people and, if sustainably utilized, offer increased potential to meet nutritional and social needs, particularly in developing countries. To realize this potential requires improved knowledge and identification of marine living resource stocks, particularly of underutilized and unutilized stocks and species, use of new technologies, better handling and processing facilities to avoid wastage, and improved quality and training of skilled personnel to manage and conserve effectively the marine living resources of the exclusive economic zone and other areas under national jurisdiction. Emphasis should also be on multi-species management and other approaches that take into account the relationships among species.

17.71. Fisheries in many areas under national jurisdiction face mounting problems, including local overfishing, unauthorized incursions by foreign fleets, ecosystem degradation, overcapitalization and excessive fleet sizes, underevaluation of catch, insufficiently selective gear, unreliable databases, and increasing competition between artisanal and large-scale fishing, and between fishing and other types of activities.

17.72. Problems extend beyond fisheries. Coral reefs and other marine and coastal habitats, such as mangroves and estuaries, are among the most highly diverse, integrated and productive of the Earth's ecosystems. They often serve important ecological functions, provide coastal protection, and are critical resources for food, energy, tourism and economic development. In many parts of the world, such marine and coastal systems are under stress or are threatened from a variety of sources, both human and natural.

Objectives

17.73. Coastal States, particularly developing countries and States whose economies are overwhelmingly dependent on the exploitation of the marine living resources of their exclusive economic zones, should obtain the full social and economic benefits from sustainable utilization of marine living resources within their exclusive economic zones and other areas under national jurisdiction.

17.74. States commit themselves to the conservation and sustainable use of marine living resources under national jurisdiction. To this end, it is necessary to:

a. Develop and increase the potential of marine living resources to meet human nutritional needs, as well as social, economic and development goals;

b. Take into account traditional knowledge and interests of local communities, small-scale artisanal fisheries and indigenous people in development and management programmes;

c. Maintain or restore populations of marine species at levels that can produce the maximum sustainable yield as qualified by relevant environmental and economic factors, taking into consideration relationships among species;

d. Promote the development and use of selective fishing gear and practices that minimize waste in the catch of target species and minimize by-catch of non-target species;

e. Protect and restore endangered marine species;

f. Preserve rare or fragile ecosystems, as well as habitats and other ecologically sensitive areas.

17.75. Nothing in paragraph 17.74 above restricts the right of a coastal State or the competence of an international organization, as appropriate, to prohibit, limit or regulate the exploitation of marine mammals more strictly than provided for in that paragraph. States shall cooperate with a view to the conservation of marine mammals and in the case of cetaceans shall in particular work through the appropriate international organizations for their conservation, management and study.

17.76. The ability of developing countries to fulfil the above objectives is dependent upon their capabilities, including the financial, scientific and technological means at their disposal. Adequate financial, scientific and technological cooperation should be provided to support action by them to implement these objectives.

Activities

(a) Management-related activities

17.77. States should ensure that marine living resources of the exclusive economic zone and other areas under national jurisdiction are conserved and managed in accordance with the provisions of the United Nations Convention on the Law of the Sea.

17.78. States, in implementing the provisions of the United Nations Convention on the Law of the Sea, should address the issues of straddling stocks and highly migratory species, and, taking fully into account the objective set out in paragraph 17.73, access to the surplus of allowable catches.

17.79. Coastal States, individually or through bilateral and/or multilateral cooperation and with the support, as appropriate of international organizations, whether subregional, regional or global, should inter alia:

a. Assess the potential of marine living resources, including underutilized or unutilized stocks and species, by developing inventories, where necessary, for their conservation and sustainable use;

b. Implement strategies for the sustainable use of marine living resources, taking into account the special needs and interests of small-scale artisanal fisheries, local communities and indigenous people to meet human nutritional and other development needs;

c. Implement, in particular in developing countries, mechanisms to develop mariculture, aquaculture and small-scale, deep-sea and oceanic fisheries within areas under national jurisdiction where assessments show that marine living resources are potentially available;

d. Strengthen their legal and regulatory frameworks, where appropriate, including management, enforcement and surveillance capabilities, to regulate activities related to the above strategies;

e. Take measures to increase the availability of marine living resources as human food by reducing wastage, post-harvest losses and discards, and improving techniques of processing, distribution and transportation;

f. Develop and promote the use of environmentally sound technology under criteria compatible with the sustainable use of marine living resources, including assessment of the environmental impact of major new fishery practices;

g. Enhance the productivity and utilization of their marine living resources for food and income.

17.80. Coastal States should explore the scope for expanding recreational and tourist activities based on marine living resources, including those for providing alternative sources of income. Such activities should be compatible with conservation and sustainable development policies and plans.

17.81. Coastal States should support the sustainability of small-scale artisanal fisheries. To this end, they should, as appropriate:

a. Integrate small-scale artisanal fisheries development in marine and coastal planning, taking into account the interests and, where appropriate, encouraging representation of fishermen, small-scale fisherworkers, women, local communities and indigenous people;

b. Recognize the rights of small-scale fishworkers and the special situation of indigenous people and local communities, including their rights to utilization and protection of their habitats on a sustainable basis;

c. Develop systems for the acquisition and recording of traditional knowledge concerning marine living resources and environment and promote the incorporation of such knowledge into management systems.

17.82. Coastal States should ensure that, in the negotiation and implementation of international agreements on the development or conservation of marine living resources, the interests of local communities and indigenous people are taken into account, in particular their right to subsistence.

17.83. Coastal States, with the support, as appropriate, of international organizations should conduct analyses of the potential for aquaculture in marine and coastal areas under national jurisdiction and apply appropriate safeguards as to the introduction of new species.

17.84. States should prohibit dynamiting, poisoning and other comparable destructive fishing practices.

17.85. States should identify marine ecosystems exhibiting high levels of biodiversity and productivity and other critical habitat areas and should provide necessary limitations on use in these areas, through, inter alia, designation of protected areas. Priority should be accorded, as appropriate, to:

a. Coral reef ecosystems;

b. Estuaries;

c. Temperate and tropical wetlands, including mangroves;

d. Seagrass beds;

e. Other spawning and nursery areas.

(b) Data and information

17.86. States, individually or through bilateral and multilateral cooperation and with the support, as appropriate, of international organizations, whether subregional, regional or global, should:

a. Promote enhanced collection and exchange of data necessary for the conservation and sustainable use of the marine living resources under national jurisdiction;

b. Exchange on a regular basis up-to-date data and information necessary for fisheries assessment;

c. Develop and share analytical and predictive tools, such as stock assessment and bioeconomic models;

d. Establish or expand appropriate monitoring and assessment programmes;

e. Complete or update marine biodiversity, marine living resource and critical habitat profiles of exclusive economic zones and other areas under national jurisdiction, taking account of changes in the environment brought about by natural causes and human activities.

(c) International and regional cooperation and coordination

17.87. States, through bilateral and multilateral cooperation, and with the support of relevant United Nations and other international organizations, should cooperate to:

a. Develop financial and technical cooperation to enhance the capacities of developing countries in small-scale and oceanic fisheries, as well as in coastal aquaculture and mariculture;

b. Promote the contribution of marine living resources to eliminate malnutrition and to achieve food self-sufficiency in developing countries, inter alia, by minimizing post-harvest losses and managing stocks for guaranteed sustainable yields;

c. Develop agreed criteria for the use of selective fishing gear and practices to minimize waste in the catch of target species and minimize by-catch of non-target species;

d. Promote seafood quality, including through national quality assurance systems for seafood, in order to promote access to markets, improve consumer confidence and maximize economic returns.

17.88. States should, where and as appropriate, ensure adequate coordination and cooperation in enclosed and semi-enclosed seas and between subregional, regional and global intergovernmental fisheries bodies.

17.89. States recognize:

a. The responsibility of the International Whaling Commission for the conservation and management of whale stocks and the regulation of whaling pursuant to the 1946 International Convention for the Regulation of Whaling;

b. The work of the International Whaling Commission Scientific Committee in carrying out studies of large whales in particular, as well as of other cetaceans;

c. The work of other organizations, such as the Inter-American Tropical Tuna Commission and the Agreement on Small Cetaceans in the Baltic and North Sea under the Bonn Convention, in the conservation, management and study of cetaceans and other marine mammals.

17.90. States should cooperate for the conservation, management and study of cetaceans.

Means of implementation

(a) Financing and cost evaluation

17.91. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $6 billion, including about $60 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

17.92. States, with the support of relevant intergovernmental organizations, as appropriate, should:

a. Provide for the transfer of environmentally sound technologies to develop fisheries, aquaculture and mariculture, particularly to developing countries;

b. Accord special attention to mechanisms for transferring resource information and improved fishing and aquaculture technologies to fishing communities at the local level;

c. Promote the study, scientific assessment and use of appropriate traditional management systems;

d. Consider observing, as appropriate, the FAO/ICES Code of Practice for Consideration of Transfer and Introduction of Marine and Freshwater Organisms;

e. Promote scientific research on marine areas of particular importance for marine living resources, such as areas of high diversity, endemism and productivity and migratory stopover points.

(c) Human resource development

17.93. States individually, or through bilateral and multilateral cooperation and with the support of relevant international organizations, whether subregional, regional or global, as appropriate, should encourage and provide support for developing countries, inter alia, to:

a. Expand multidisciplinary education, training and research on marine living resources, particularly in the social and economic sciences;

b. Create training opportunities at national and regional levels to support artisanal (including subsistence) fisheries, to develop small-scale use of marine living resources and to encourage equitable participation of local communities, small-scale fish workers, women and indigenous people;

c. Introduce topics relating to the importance of marine living resources in educational curricula at all levels.

(d) Capacity-building

17.94. Coastal States, with the support of relevant subregional, regional and global agencies, where appropriate, should:

a. Develop research capacities for assessment of marine living resource populations and monitoring;

b. Provide support to local fishing communities, in particular those that rely on fishing for subsistence, indigenous people and women, including, as appropriate, the technical and financial assistance to organize, maintain, exchange and improve traditional knowledge of marine living resources and fishing techniques, and upgrade knowledge on marine ecosystems;

c. Establish sustainable aquaculture development strategies, including environmental management in support of rural fish-farming communities;

d. Develop and strengthen, where the need may arise, institutions capable of implementing the objectives and activities related to the conservation and management of marine living resources.

17.95. Special support, including cooperation among States, will be needed to enhance the capacities of developing countries in the areas of data and information, scientific and technological means and human resource development in order to enable them to participate effectively in the conservation and sustainable use of marine living resources under national jurisdiction.

E. Addressing critical uncertainties for the management of the marine environment and climate change

Basis for action

17.96. The marine environment is vulnerable and sensitive to climate and atmospheric changes. Rational use and development of coastal areas, all seas and marine resources, as well as conservation of the marine environment, requires the ability to determine the present state of these systems and to predict future conditions. The high degree of uncertainty in present information inhibits effective management and limits the ability to make predictions and assess environmental change. Systematic collection of data on marine environmental parameters will be needed to apply integrated management approaches and to predict effects of global climate change and of atmospheric phenomena, such as ozone depletion, on living marine resources and the marine environment. In order to determine the role of the oceans and all seas in driving global systems and to predict natural and human-induced changes in marine and coastal environments, the mechanisms to collect, synthesize and disseminate information from research and systematic observation activities need to be restructured and reinforced considerably.

17.97. There are many uncertainties about climate change and particularly about sealevel rise. Small increases in sealevel have the potential of causing significant damage to small islands and low-lying coasts. Response strategies should be based on sound data. A long-term cooperative research commitment is needed to provide the data required for global climate models and to reduce uncertainty. Meanwhile, precautionary measures should be undertaken to diminish the risks and effects, particularly on small islands and on low-lying and coastal areas of the world.

17.98. Increased ultraviolet radiation derived from ozone depletion has been reported in some areas of the world. An assessment of its effects in the marine environment is needed to reduce uncertainty and to provide a basis for action.

Objectives

17.99. States, in accordance with provisions of the United Nations Convention on the Law of the Sea on marine scientific research, commit themselves to improve the understanding of the marine environment and its role on global processes. To this end, it is necessary to:

a. Promote scientific research on and systematic observation of the marine environment within the limits of national jurisdiction and high seas, including interactions with atmospheric phenomena, such as ozone depletion;

b. Promote exchange of data and information resulting from scientific research and systematic observation and from traditional ecological knowledge and ensure its availability to policy makers and the public at the national level;

c. Cooperate with a view to the development of standard inter-calibrated procedures, measuring techniques, data storage and management capabilities for scientific research on and systematic observation of the marine environment.

Activities

(a) Management-related activities

17.100. States should consider, inter alia:

a. Coordinating national and regional observation programmes for coastal and near-shore phenomena related to climate change and for research parameters essential for marine and coastal management in all regions;

b. Providing improved forecasts of marine conditions for the safety of inhabitants of coastal areas and for the efficiency of maritime operations;

c. Cooperating with a view to adopting special measures to cope with and adapt to potential climate change and sealevel rise, including the development of globally accepted methodologies for coastal vulnerability assessment, modelling and response strategies particularly for priority areas, such as small islands and low-lying and critical coastal areas;

d. Identifying ongoing and planned programmes of systematic observation of the marine environment, with a view to integrating activities and establishing priorities to address critical uncertainties for oceans and all seas;

e. Initiating a programme of research to determine the marine biological effects of increased levels of ultraviolet rays due to the depletion of the stratospheric ozone layer and to evaluate the possible effects.

17.101. Recognizing the important role that oceans and all seas play in attenuating potential climate change, IOC and other relevant competent United Nations bodies, with the support of countries having the resources and expertise, should carry out analysis, assessments and systematic observation of the role of oceans as a carbon sink.

(b) Data and information

17.102. States should consider, inter alia:

a. Increasing international cooperation particularly with a view to strengthening national scientific and technological capabilities for analysing, assessing and predicting global climate and environmental change;

b. Supporting the role of the IOC in cooperation with WMO, UNEP and other international organizations in the collection, analysis and distribution of data and information from the oceans and all seas, including as appropriate, through the Global Ocean Observing System, giving special attention to the need for IOC to develop fully the strategy for providing training and technical assistance for developing countries through its Training, Education and Mutual Assistance (TEMA) programme;

c. Creating national multisectoral information bases, covering the results of research and systematic observation programmes;

d. Linking these databases to existing data and information services and mechanisms, such as World Weather Watch and Earthwatch;

e. Cooperating with a view to the exchange of data and information and its storage and archiving through the world and regional data centres;

f. Cooperating to ensure full participation of developing countries, in particular, in any international scheme under the organs and organizations of the United Nations system for the collection, analysis and use of data and information.

(c) International and regional cooperation and coordination

17.103. States should consider bilaterally and multilaterally and in cooperation with international organizations, whether subregional, regional, interregional or global, where appropriate:

a. Providing technical cooperation in developing the capacity of coastal and island States for marine research and systematic observation and for using its results;

b. Strengthening existing national institutions and creating, where necessary, international analysis and prediction mechanisms in order to prepare and exchange regional and global oceanographic analyses and forecasts and to provide facilities for international research and training at national, subregional and regional levels, where applicable.

17.104. In recognition of the value of Antarctica as an area for the conduct of scientific research, in particular research essential to understanding the global environment, States carrying out such research activities in Antarctica should, as provided for in Article III of the Antarctic Treaty, continue to:

a. Ensure that data and information resulting from such research are freely available to the international community;

b. Enhance access of the international scientific community and specialized agencies of the United Nations to such data and information, including the encouragement of periodic seminars and symposia.

17.105. States should strengthen high-level inter-agency, subregional, regional and global coordination, as appropriate, and review mechanisms to develop and integrate systematic observation networks. This would include:

a. Review of existing regional and global databases;

b. Mechanisms to develop comparable and compatible techniques, validate methodologies and measurements, organize regular scientific reviews, develop options for corrective measures, agree on formats for presentation and storage, and communicate the information gathered to potential users;

c. Systematic observation of coastal habitats and sealevel changes, inventories of marine pollution sources and reviews of fisheries statistics;

d. Organization of periodic assessments of ocean and all seas and coastal area status and trends.

17.106. International cooperation, through relevant organizations within the United Nations system, should support countries to develop and integrate regional systematic long-term observation programmes, when applicable, into the Regional Seas Programmes in a coordinated fashion to implement, where appropriate, subregional, regional and global observing systems based on the principle of exchange of data. One aim should be the predicting of the effects of climate-related emergencies on existing coastal physical and socio-economic infrastructure.

17.107. Based on the results of research on the effects of the additional ultraviolet radiation reaching the Earth's surface, in the fields of human health, agriculture and marine environment, States and international organizations should consider taking appropriate remedial measures.

Means of implementation

(a) Financing and cost evaluation

17.108. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $750 million, including about $480 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

17.109. Developed countries should provide the financing for the further development and implementation of the Global Ocean Observing System.

(b) Scientific and technological means

17.110. To address critical uncertainties through systematic coastal and marine observations and research, coastal States should cooperate in the development of procedures that allow for comparable analysis and soundness of data. They should also cooperate on a subregional and regional basis, through existing programmes where applicable, share infrastructure and expensive and sophisticated equipment, develop quality assurance procedures and develop human resources jointly. Special attention should be given to transfer of scientific and technological knowledge and means to support States, particularly developing countries, in the development of endogenous capabilities.

17.111. International organizations should support, when requested, coastal countries in implementing research projects on the effects of additional ultraviolet radiation.

(c) Human resource development

17.112. States, individually or through bilateral and multilateral cooperation and with the support, as appropriate, of international organizations whether subregional, regional or global, should develop and implement comprehensive programmes, particularly in developing countries, for a broad and coherent approach to meeting their core human resource needs in the marine sciences.

(d) Capacity-building

17.113. States should strengthen or establish as necessary, national scientific and technological oceanographic commissions or equivalent bodies to develop, support and coordinate marine science activities and work closely with international organizations.

17.114. States should use existing subregional and regional mechanisms, where applicable, to develop knowledge of the marine environment, exchange information, organize systematic observations and assessments, and make the most effective use of scientists, facilities and equipment. They should also cooperate in the promotion of endogenous research capabilities in developing countries.

F. Strengthening international, including regional, cooperation and coordination

Basis for action

17.115. It is recognized that the role of international cooperation is to support and supplement national efforts. Implementation of strategies and activities under the programme areas relative to marine and coastal areas and seas requires effective institutional arrangements at national, subregional, regional and global levels, as appropriate. There are numerous national and international, including regional, institutions, both within and outside the United Nations system, with competence in marine issues, and there is a need to improve coordination and strengthen links among them. It is also important to ensure that an integrated and multisectoral approach to marine issues is pursued at all levels.

Objectives

17.116. States commit themselves, in accordance with their policies, priorities and resources, to promote institutional arrangements necessary to support the implementation of the programme areas in this chapter. To this end, it is necessary, as appropriate, to:

a. Integrate relevant sectoral activities addressing environment and development in marine and coastal areas at national, subregional, regional and global levels, as appropriate;

b. Promote effective information exchange and, where appropriate, institutional linkages between bilateral and multilateral national, regional, subregional and interregional institutions dealing with environment and development in marine and coastal areas;

c. Promote within the United Nations system, regular intergovernmental review and consideration of environment and development issues with respect to marine and coastal areas;

d. Promote the effective operation of coordinating mechanisms for the components of the United Nations system dealing with issues of environment and development in marine and coastal areas, as well as links with relevant international development bodies.

Activities

(a) Management-related activities

Global

17.117. The General Assembly should provide for regular consideration, within the United Nations system, at the intergovernmental level of general marine and coastal issues, including environment and development matters, and should request the Secretary-General and executive heads of United Nations agencies and organizations to:

a. Strengthen coordination and develop improved arrangements among the relevant United Nations organizations with major marine and coastal responsibilities, including their subregional and regional components;

b. Strengthen coordination between those organizations and other United Nations organizations, institutions and specialized agencies dealing with development, trade and other related economic issues, as appropriate;

c. Improve representation of United Nations agencies dealing with the marine environment in United Nations system-wide coordination efforts;

d. Promote, where necessary, greater collaboration between the United Nations agencies and subregional and regional coastal and marine programmes;

e. Develop a centralized system to provide for information on legislation and advice on implementation of legal agreements on marine environmental and development issues.

17.118. States recognize that environmental policies should deal with the root causes of environmental degradation, thus preventing environmental measures from resulting in unnecessary restrictions to trade. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing international environmental problems should, as far as possible, be based on an international consensus. Domestic measures targeted to achieve certain environmental objectives may need trade measures to render them effective. Should trade policy measures be found necessary for the enforcement of environmental policies, certain principles and rules should apply. These could include, inter alia, the principle of non-discrimination; the principle that the trade measure chosen should be the least trade-restrictive necessary to achieve the objectives; an obligation to ensure transparency in the use of trade measures related to the environment and to provide adequate notification of national regulations; and the need to give consideration to the special conditions and development requirements of developing countries as they move towards internationally agreed environmental objectives.

Subregional and regional

17.119. States should consider, as appropriate:

a. Strengthening, and extending where necessary, intergovernmental regional cooperation, the Regional Seas Programmes of UNEP, regional and subregional fisheries organizations and regional commissions;

b. Introduce, where necessary, coordination among relevant United Nations and other multilateral organizations at the subregional and regional levels, including consideration of co-location of their staff;

c. Arrange for periodic intraregional consultations;

d. Facilitate access to and use of expertise and technology through relevant national bodies to subregional and regional centres and networks, such as the Regional Centres for Marine Technology.

(b) Data and information

17.120. States should, where appropriate:

a. Promote exchange of information on marine and coastal issues;

b. Strengthen the capacity of international organizations to handle information and support the development of national, subregional and regional data and information systems, where appropriate. This could also include networks linking countries with comparable environmental problems;

c. Further develop existing international mechanisms such as Earthwatch and GESAMP.

Means of implementation

(a) Financing and cost evaluation

17.121. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $50 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means, human resource development and capacity-building

17.122. The means of implementation outlined in the other programme areas on marine and coastal issues, under the sections on Scientific and technological means, human resource development and capacity-building are entirely relevant for this programme area as well. Additionally, States should, through international cooperation, develop a comprehensive programme for meeting the core human resource needs in marine sciences at all levels.

G. Sustainable development of small islands

Basis for action

17.123. Small island developing States, and islands supporting small communities are a special case both for environment and development. They are ecologically fragile and vulnerable. Their small size, limited resources, geographic dispersion and isolation from markets, place them at a disadvantage economically and prevent economies of scale. For small island developing States the ocean and coastal environment is of strategic importance and constitutes a valuable development resource.

17.124. Their geographic isolation has resulted in their habitation of a comparatively large number of unique species of flora and fauna, giving them a very high share of global biodiversity. They also have rich and diverse cultures with special adaptations to island environments and knowledge of the sound management of island resources.

17.125. Small island developing States have all the environmental problems and challenges of the coastal zone concentrated in a limited land area. They are considered extremely vulnerable to global warming and sealevel rise, with certain small low-lying islands facing the increasing threat of the loss of their entire national territories. Most tropical islands are also now experiencing the more immediate impacts of increasing frequency of cyclones, storms and hurricanes associated with climate change. These are causing major set-backs to their socio-economic development.

17.126. Because small island development options are limited, there are special challenges to planning for and implementing sustainable development. Small island developing States will be constrained in meeting these challenges without the cooperation and assistance of the international community.

Objectives

17.127. States commit themselves to addressing the problems of sustainable development of small island developing States. To this end, it is necessary:

a. To adopt and implement plans and programmes to support the sustainable development and utilization of their marine and coastal resources, including meeting essential human needs, maintaining biodiversity and improving the quality of life for island people;

b. To adopt measures which will enable small island developing States to cope effectively, creatively and sustainably with environmental change and to mitigate impacts and reduce the threats posed to marine and coastal resources.

Activities

(a) Management-related activities

17.128. Small island developing States, with the assistance as appropriate of the international community and on the basis of existing work of national and international organizations, should:

a. Study the special environmental and developmental characteristics of small islands, producing an environmental profile and inventory of their natural resources, critical marine habitats and biodiversity;

b. Develop techniques for determining and monitoring the carrying capacity of small islands under different development assumptions and resource constraints;

c. Prepare medium- and long-term plans for sustainable development that emphasize multiple use of resources, integrate environmental considerations with economic and sectoral planning and policies, define measures for maintaining cultural and biological diversity and conserve endangered species and critical marine habitats;

d. Adapt coastal area management techniques, such as planning, siting and environmental impact assessments, using Geographical Information Systems (GIS), suitable to the special characteristics of small islands, taking into account the traditional and cultural values of indigenous people of island countries;

e. Review the existing institutional arrangements and identify and undertake appropriate institutional reforms essential to the effective implementation of sustainable development plans, including intersectoral coordination and community participation in the planning process;

f. Implement sustainable development plans, including the review and modification of existing unsustainable policies and practices;

g. Based on precautionary and anticipatory approaches, design and implement rational response strategies to address the environmental, social and economic impacts of climate change and sealevel rise, and prepare appropriate contingency plans;

h. Promote environmentally sound technology for sustainable development within small island developing States and identify technologies that should be excluded because of their threats to essential island ecosystems.

(b) Data and information

17.129. Additional information on the geographic, environmental, cultural and socio-economic characteristics of islands should be compiled and assessed to assist in the planning process. Existing island databases should be expanded and geographic information systems developed and adapted to suit the special characteristics of islands.

(c) International and regional cooperation and coordination

17.130. Small island developing States, with the support, as appropriate, of international organizations, whether subregional, regional or global, should develop and strengthen inter-island, regional and interregional cooperation and information exchange, including periodic regional and global meetings on sustainable development of small island developing States with the first global conference on the sustainable development of small island developing States, to be held in 1993.

17.131. International organizations, whether subregional, regional or global, must recognize the special development requirements of small island developing States and give adequate priority in the provision of assistance, particularly with respect to the development and implementation of sustainable development plans.

Means of implementation

(a) Financing and cost evaluation

17.132. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $130 million, including about $50 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technical means

17.133. Centres for the development and diffusion of scientific information and advice on technical means and technologies appropriate to small island developing States, especially with reference to the management of the coastal zone, the exclusive economic zone and marine resources, should be established or strengthened, as appropriate, on a regional basis.

(c) Human resource development

17.134. Since populations of small island developing States cannot maintain all necessary specializations, training for integrated coastal management and development should aim to produce cadres of managers or scientists, engineers and coastal planners able to integrate the many factors that need to be considered in integrated coastal management. Resource users should be prepared to execute both management and protection functions and to apply the polluter pays principle and support the training of their personnel. Educational systems should be modified to meet these needs and special training programmes developed in integrated island management and development. Local planning should be integrated in educational curricula of all levels and public awareness campaigns developed with the assistance of non-governmental organizations and indigenous coastal populations.

(d) Capacity-building

17.135. The total capacity of small island developing States will always be limited. Existing capacity must therefore be restructured to meet efficiently the immediate needs for sustainable development and integrated management. At the same time, adequate and appropriate assistance from the international community must be directed at strengthening the full range of human resources needed on a continuous basis to implement sustainable development plans.

17.136. New technologies that can increase the output and range of capability of the limited human resources should be employed to increase the capacity of very small populations to meet their needs. The development and application of traditional knowledge to improve the capacity of countries to implement sustainable development should be fostered.

Notes

1/ References to the United Nations Convention on the Law of the Sea in this chapter of Agenda 21 do not prejudice the position of any State with respect to signature, ratification of or accession to the Convention.

2/ References to the United Nations Convention on the Law of the Sea in this chapter of Agenda 21 do not prejudice the position of States which view the Convention as having a unified character.

3/ Nothing in the programme areas of this chapter should be interpreted as prejudicing the rights of the States involved in a dispute of sovereignty or in the delimitation of the maritime areas concerned.

Agenda 21 – Chapter 18

PROTECTION OF THE QUALITY AND SUPPLY OF FRESHWATER RESOURCES: APPLICATION OF INTEGRATED APPROACHES TO THE DEVELOPMENT, MANAGEMENT AND USE OF WATER RESOURCES

18.1. Freshwater resources are an essential component of the Earth's hydrosphere and an indispensable part of all terrestrial ecosystems. The freshwater environment is characterized by the hydrological cycle, including floods and droughts, which in some regions have become more extreme and dramatic in their consequences. Global climate change and atmospheric pollution could also have an impact on freshwater resources and their availability and, through sea-level rise, threaten low-lying coastal areas and small island ecosystems.

18.2. Water is needed in all aspects of life. The general objective is to make certain that adequate supplies of water of good quality are maintained for the entire population of this planet, while preserving the hydrological, biological and chemical functions of ecosystems, adapting human activities within the capacity limits of nature and combating vectors of water-related diseases. Innovative technologies, including the improvement of indigenous technologies, are needed to fully utilize limited water resources and to safeguard those resources against pollution.

18.3. The widespread scarcity, gradual destruction and aggravated pollution of freshwater resources in many world regions, along with the progressive encroachment of incompatible activities, demand integrated water resources planning and management. Such integration must cover all types of interrelated freshwater bodies, including both surface water and groundwater, and duly consider water quantity and quality aspects. The multisectoral nature of water resources development in the context of socio-economic development must be recognized, as well as the multi-interest utilization of water resources for water supply and sanitation, agriculture, industry, urban development, hydropower generation, inland fisheries, transportation, recreation, low and flat lands management and other activities. Rational water utilization schemes for the development of surface and underground water-supply sources and other potential sources have to be supported by concurrent water conservation and wastage minimization measures. Priority, however, must be accorded to flood prevention and control measures, as well as sedimentation control, where required.

18.4. Transboundary water resources and their use are of great importance to riparian States. In this connection, cooperation among those States may be desirable in conformity with existing agreements and/or other relevant arrangements, taking into account the interests of all riparian States concerned.

18.5. The following programme areas are proposed for the freshwater sector:

a. Integrated water resources development and management;

b. Water resources assessment;

c. Protection of water resources, water quality and aquatic ecosystems;

d. Drinking-water supply and sanitation;

e. Water and sustainable urban development;

f. Water for sustainable food production and rural development;

g. Impacts of climate change on water resources.

PROGRAMME AREAS

A. Integrated water resources development and management

Basis for action

18.6. The extent to which water resources development contributes to economic productivity and social well-being is not usually appreciated, although all social and economic activities rely heavily on the supply and quality of freshwater. As populations and economic activities grow, many countries are rapidly reaching conditions of water scarcity or facing limits to economic development. Water demands are increasing rapidly, with 70-80 per cent required for irrigation, less than 20 per cent for industry and a mere 6 per cent for domestic consumption. The holistic management of freshwater as a finite and vulnerable resource, and the integration of sectoral water plans and programmes within the framework of national economic and social policy, are of paramount importance for action in the 1990s and beyond. The fragmentation of responsibilities for water resources development among sectoral agencies is proving, however, to be an even greater impediment to promoting integrated water management than had been anticipated. Effective implementation and coordination mechanisms are required.

Objectives

18.7. The overall objective is to satisfy the freshwater needs of all countries for their sustainable development.

18.8. Integrated water resources management is based on the perception of water as an integral part of the ecosystem, a natural resource and a social and economic good, whose quantity and quality determine the nature of its utilization. To this end, water resources have to be protected, taking into account the functioning of aquatic ecosystems and the perenniality of the resource, in order to satisfy and reconcile needs for water in human activities. In developing and using water resources, priority has to be given to the satisfaction of basic needs and the safeguarding of ecosystems. Beyond these requirements, however, water users should be charged appropriately.

18.9. Integrated water resources management, including the integration of land- and water-related aspects, should be carried out at the level of the catchment basin or sub-basin. Four principal objectives should be pursued, as follows:

a. To promote a dynamic, interactive, iterative and multisectoral approach to water resources management, including the identification and protection of potential sources of freshwater supply, that integrates technological, socio-economic, environmental and human health considerations;

b. To plan for the sustainable and rational utilization, protection, conservation and management of water resources based on community needs and priorities within the framework of national economic development policy;

c. To design, implement and evaluate projects and programmes that are both economically efficient and socially appropriate within clearly defined strategies, based on an approach of full public participation, including that of women, youth, indigenous people and local communities in water management policy-making and decision-making;

d. To identify and strengthen or develop, as required, in particular in developing countries, the appropriate institutional, legal and financial mechanisms to ensure that water policy and its implementation are a catalyst for sustainable social progress and economic growth.

18.10. In the case of transboundary water resources, there is a need for riparian States to formulate water resources strategies, prepare water resources action programmes and consider, where appropriate, the harmonization of those strategies and action programmes.

18.11. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including the United Nations and other relevant organizations as appropriate, could set the following targets:

a. By the year 2000:

    i. To have designed and initiated costed and targeted national action programmes, and to have put in place appropriate institutional structures and legal instruments;
    ii. To have established efficient water-use programmes to attain sustainable resource utilization patterns;

b. By the year 2025:
    i. To have achieved subsectoral targets of all freshwater programme areas.

It is understood that the fulfilment of the targets quantified in (i) and (ii) above will depend upon new and additional financial resources that will be made available to developing countries in accordance with the relevant provisions of General Assembly resolution 44/228.

Activities

18.12. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including the United Nations and other relevant organizations as appropriate, could implement the following activities to improve integrated water resources management:

a. Formulation of costed and targeted national action plans and investment programmes;
b. Integration of measures for the protection and conservation of potential sources of freshwater supply, including the inventorying of water resources, with land-use planning, forest resource utilization, protection of mountain slopes and riverbanks and other relevant development and conservation activities;
c. Development of interactive databases, forecasting models, economic planning models and methods for water management and planning, including environmental impact assessment methods;
d. Optimization of water resources allocation under physical and socio-economic constraints;
e. Implementation of allocation decisions through demand management, pricing mechanisms and regulatory measures;
f. Flood and drought management, including risk analysis and environmental and social impact assessment;
g. Promotion of schemes for rational water use through public awareness-raising, educational programmes and levying of water tariffs and other economic instruments;
h. Mobilization of water resources, particularly in arid and semi-arid areas;
i. Promotion of international scientific research cooperation on freshwater resources;
j. Development of new and alternative sources of water-supply such as sea-water desalination, artificial groundwater recharge, use of marginal-quality water, waste-water reuse and water recycling;
k. Integration of water (including surface and underground water resources) quantity and quality management;
l. Promotion of water conservation through improved water-use efficiency and wastage minimization schemes for all users, including the development of water-saving devices;
m. Support to water-users groups to optimize local water resources management;

n. Development of public participatory techniques and their implementation in decision-making, particularly the enhancement of the role of women in water resources planning and management;

o. Development and strengthening, as appropriate, of cooperation, including mechanisms where appropriate, at all levels concerned, namely:

   a. At the lowest appropriate level, delegation of water resources management, generally, to such a level, in accordance with national legislation, including decentralization of government services to local authorities, private enterprises and communities;

   b. At the national level, integrated water resources planning and management in the framework of the national planning process and, where appropriate, establishment of independent regulation and monitoring of freshwater, based on national legislation and economic measures;

   c. At the regional level, consideration, where appropriate, of the harmonization of national strategies and action programmes;

   d. At the global level, improved delineation of responsibilities, division of labour and coordination of international organizations and programmes, including facilitating discussions and sharing of experiences in areas related to water resources management;

p. Dissemination of information, including operational guidelines, and promotion of education for water users, including the consideration by the United Nations of a World Water Day.

Means of implementation

(a) Financing and cost evaluation

18.13. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $115 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

18.14. The development of interactive databases, forecasting methods and economic planning models appropriate to the task of managing water resources in an efficient and sustainable manner will require the application of new techniques such as geographical information systems and expert systems to gather, assimilate, analyse and display multisectoral information and to optimize decision-making. In addition, the development of new and alternative sources of water-supply and low-cost water technologies will require innovative applied research. This will involve the transfer, adaptation and diffusion of new techniques and technology among developing countries, as well as the development of endogenous capacity, for the purpose of being able to deal with the added dimension of integrating engineering, economic, environmental and social aspects of water resources management and predicting the effects in terms of human impact.

18.15. Pursuant to the recognition of water as a social and economic good, the various available options for charging water users (including domestic, urban, industrial and agricultural water-user groups) have to be further evaluated and field-tested. Further development is required for economic instruments that take into account opportunity costs and environmental externalities. Field studies on the willingness to pay should be conducted in rural and urban situations.

18.16. Water resources development and management should be planned in an integrated manner, taking into account long-term planning needs as well as those with narrower horizons, that is to say, they should incorporate environmental, economic and social considerations based on the principle of sustainability; include the requirements of all users as well as those relating to the prevention and mitigation of water-related hazards; and constitute an integral part of the socio-economic development planning process. A prerequisite for the sustainable management of water as a scarce vulnerable resource is the obligation to acknowledge in all planning and development its full costs. Planning considerations should reflect benefits investment, environmental protection and operation costs, as well as the opportunity costs reflecting the most valuable alternative use of water. Actual charging need not necessarily burden all beneficiaries with the consequences of those considerations. Charging mechanisms should, however, reflect as far as possible both the true cost of water when used as an economic good and the ability of the communities to pay.

18.17. The role of water as a social, economic and life-sustaining good should be reflected in demand management mechanisms and implemented through water conservation and reuse, resource assessment and financial instruments.

18.18. The setting afresh of priorities for private and public investment strategies should take into account (a) maximum utilization of existing projects, through maintenance, rehabilitation and optimal operation; (b) new or alternative clean technologies; and (c) environmentally and socially benign hydropower.

(c) Human resources development

18.19. The delegation of water resources management to the lowest appropriate level necessitates educating and training water management staff at all levels and ensuring that women participate equally in the education and training programmes. Particular emphasis has to be placed on the introduction of public participatory techniques, including enhancement of the role of women, youth, indigenous people and local communities. Skills related to various water management functions have to be developed by municipal government and water authorities, as well as in the private sector, local/national non-governmental organizations, cooperatives, corporations and other water-user groups. Education of the public regarding the importance of water and its proper management is also needed.

18.20. To implement these principles, communities need to have adequate capacities. Those who establish the framework for water development and management at any level, whether international, national or local, need to ensure that the means exist to build those capacities. The means will vary from case to case. They usually include:

a. Awareness-creation programmes, including mobilizing commitment and support at all levels and initiating global and local action to promote such programmes;

b. Training of water managers at all levels so that they have an appropriate understanding of all the elements necessary for their decision-making;

c. Strengthening of training capacities in developing countries;

d. Appropriate training of the necessary professionals, including extension workers;

e. Improvement of career structures;

f. Sharing of appropriate knowledge and technology, both for the collection of data and for the implementation of planned development including non-polluting technologies and the knowledge needed to extract the best performance from the existing investment system.

(d) Capacity-building

18.21. Institutional capacity for implementing integrated water management should be reviewed and developed when there is a clear demand. Existing administrative structures will often be quite capable of achieving local water resources management, but the need may arise for new institutions based upon the perspective, for example, of river catchment areas, district development councils and local community committees. Although water is managed at various levels in the socio-political system, demand-driven management requires the development of water-related institutions at appropriate levels, taking into account the need for integration with land-use management.

18.22. In creating the enabling environment for lowest-appropriate-level management, the role of Government includes mobilization of financial and human resources, legislation, standard-setting and other regulatory functions, monitoring and assessment of the use of water and land resources, and creating of opportunities for public participation. International agencies and donors have an important role to play in providing support to developing countries in creating the required enabling environment for integrated water resources management. This should include, as appropriate, donor support to local levels in developing countries, including community-based institutions, non-governmental organizations and women's groups.

B. Water resources assessment

Basis for action

18.23. Water resources assessment, including the identification of potential sources of freshwater supply, comprises the continuing determination of sources, extent, dependability and quality of water resources and of the human activities that affect those resources. Such assessment constitutes the practical basis for their sustainable management and a prerequisite for evaluation of the possibilities for their development. There is, however, growing concern that at a time when more precise and reliable information is needed about water resources, hydrologic services and related bodies are less able than before to provide this information, especially information on groundwater and water quality. Major impediments are the lack of financial resources for water resources assessment, the fragmented nature of hydrologic services and the insufficient numbers of qualified staff. At the same time, the advancing technology for data capture and management is increasingly difficult to access for developing countries. Establishment of national databases is, however, vital to water resources assessment and to mitigation of the effects of floods, droughts, desertification and pollution.

Objectives

18.24. Based upon the Mar del Plata Action Plan, this programme area has been extended into the 1990s and beyond with the overall objective of ensuring the assessment and forecasting of the quantity and quality of water resources, in order to estimate the total quantity of water resources available and their future supply potential, to determine their current quality status, to predict possible conflicts between supply and demand and to provide a scientific database for rational water resources utilization.

18.25. Five specific objectives have been set accordingly, as follows:

a. To make available to all countries water resources assessment technology that is appropriate to their needs, irrespective of their level of development, including methods for the impact assessment of climate change on freshwaters;

b. To have all countries, according to their financial means, allocate to water resources assessment financial resources in line with the economic and social needs for water resources data;

c. To ensure that the assessment information is fully utilized in the development of water management policies;

d. To have all countries establish the institutional arrangements needed to ensure the efficient collection, processing, storage, retrieval and dissemination to users of information about the quality and quantity of available water resources at the level of catchments and groundwater aquifers in an integrated manner;

e. To have sufficient numbers of appropriately qualified and capable staff recruited and retained by water resources assessment agencies and provided with the training and retraining they will need to carry out their responsibilities successfully.

18.26. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including cooperation with the United Nations and other relevant organizations, as appropriate, could set the following targets:

a. By the year 2000, to have studied in detail the feasibility of installing water resources assessment services;

b. As a long-term target, to have fully operational services available based upon high-density hydrometric networks.

Activities

18.27. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including the United Nations and other relevant organizations as appropriate, could undertake the following activities:

a. Institutional framework:

  a. Establish appropriate policy frameworks and national priorities;

  b. Establish and strengthen the institutional capabilities of countries, including legislative and regulatory arrangements, that are required to ensure the adequate assessment of their water resources and the provision of flood and drought forecasting services;

  c. Establish and maintain effective cooperation at the national level between the various agencies responsible for the collection, storage and analysis of hydrologic data;

  d. Cooperate in the assessment of transboundary water resources, subject to the prior agreement of each riparian State concerned;

b. Data systems:

  a. Review existing data-collection networks and assess their adequacy, including those that provide real-time data for flood and drought forecasting;

  b. Improve networks to meet accepted guidelines for the provision of data on water quantity and quality for surface and groundwater, as well as relevant land-use data;

  c. Apply standards and other means to ensure data compatibility;

  d. Upgrade facilities and procedures used to store, process and analyse hydrologic data and make such data and the forecasts derived from them available to potential users;

  e. Establish databases on the availability of all types of hydrologic data at the national level;

  f. Implement "data rescue" operations, for example, establishment of national archives of water resources;

g. Implement appropriate well-tried techniques for the processing of hydrologic data;

h. Derive area-related estimates from point hydrologic data;

i. Assimilate remotely sensed data and the use, where appropriate, of geographical information systems;

c. Data dissemination:

a. Identify the need for water resources data for various planning purposes;

b. Analyse and present data and information on water resources in the forms required for planning and management of countries' socio-economic development and for use in environmental protection strategies and in the design and operation of specific water-related projects;

c. Provide forecasts and warnings of flood and drought to the general public and civil defence;

d. Research and development:

a. Establish or strengthen research and development programmes at the national, subregional, regional and international levels in support of water resources assessment activities;

b. Monitor research and development activities to ensure that they make full use of local expertise and other local resources and that they are appropriate for the needs of the country or countries concerned.

Means of implementation

(a) Financing and cost evaluation

18.28. The Conference secretariat has estimated the everage total annual cost (1993-2000) of implementing the activities of this programme to be about $355 million, including about $145 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

18.29. Important research needs include (a) development of global hydrologic models in support of analysis of climate change impact and of macroscale water resources assessment; (b) closing of the gap between terrestrial hydrology and ecology at different scales, including the critical water-related processes behind loss of vegetation and land degradation and its restoration; and (c) study of the key processes in water-quality genesis, closing the gap between hydrologic flows and biogeochemical processes. The research models should build upon hydrologic balance studies and also include the consumptive use of water. This approach should also, when appropriate, be applied at the catchment level.

18.30. Water resources assessment necessitates the strengthening of existing systems for technology transfer, adaptation and diffusion, and the development of new technology for use under field conditions, as well as the development of endogenous capacity. Prior to inaugurating the above activities, it is necessary to prepare catalogues of the water resources information held by government services, the private sector, educational institutes, consultants, local water-use organizations and others.

(c) Human resource development

18.31. Water resources assessment requires the establishment and maintenance of a body of well-trained and motivated staff sufficient in number to undertake the above activities. Education and training programmes designed to ensure an adequate supply of these trained personnel should be established or strengthened at the local, national, subregional or regional level. In addition, the provision of attractive terms of employment and career paths for professional and technical staff should be encouraged. Human resource needs should be monitored periodically, including all levels of employment. Plans have to be established to meet those needs through education and training opportunities and international programmes of courses and conferences.

18.32. Because well-trained people are particularly important to water resources assessment and hydrologic forecasting, personnel matters should receive special attention in this area. The aim should be to attract and retain personnel to work on water resources assessment who are sufficient in number and adequate in their level of education to ensure the effective implementation of the activities that are planned. Education may be called for at both the national and the international level, with adequate terms of employment being a national responsibility.

18.33. Recommended actions include:

a. Identifying education and training needs geared to the specific requirements of countries;

b. Establishing and strengthening education and training programmes on water-related topics, within an environmental and developmental context, for all categories of staff involved in water resources assessment activities, using advanced educational technology, where appropriate, and involving both men and women;

c. Developing sound recruitment, personnel and pay policies for staff of national and local water agencies.

(d) Capacity-building

18.34. The conduct of water resources assessment on the basis of operational national hydrometric networks requires an enabling environment at all levels. The following national support action is necessary for enhanced national capacities:

a. Review of the legislative and regulatory basis of water resources assessment;

b. Facilitation of close collaboration among water sector agencies, particularly between information producers and users;

c. Implementation of water management policies based upon realistic appraisals of water resources conditions and trends;

d. Strengthening of the managerial capabilities of water-user groups, including women, youth, indigenous people and local communities, to improve water-use efficiency at the local level.

C. Protection of water resources, water quality and aquatic ecosystems

Basis for action

18.35. Freshwater is a unitary resource. Long-term development of global freshwater requires holistic management of resources and a recognition of the interconnectedness of the elements related to freshwater and freshwater quality. There are few regions of the world that are still exempt from problems of loss of potential sources of freshwater supply, degraded water quality and pollution of surface and groundwater sources. Major problems affecting the water quality of rivers and lakes arise, in variable order of importance according to different situations, from inadequately treated domestic sewage, inadequate controls on the discharges of industrial waste waters, loss and destruction of catchment areas, ill-considered siting of industrial plants, deforestation, uncontrolled shifting cultivation and poor agricultural practices. This gives rise to the leaching of nutrients and pesticides. Aquatic ecosystems are disturbed and living freshwater resources are threatened. Under certain circumstances, aquatic ecosystems are also affected by agricultural water resource development projects such as dams, river diversions, water installations and irrigation schemes. Erosion, sedimentation, deforestation and desertification have led to increased land degradation, and the creation of reservoirs has, in some cases, resulted in adverse effects on ecosystems. Many of these problems have arisen from a development model that is environmentally destructive and from a lack of public awareness and education about surface and groundwater resource protection. Ecological and human health effects are the measurable consequences, although the means to monitor them are inadequate or non-existent in many countries. There is a widespread lack of perception of the linkages between the development, management, use and treatment of water resources and aquatic ecosystems. A preventive approach, where appropriate, is crucial to the avoiding of costly subsequent measures to rehabilitate, treat and develop new water supplies.

Objectives

18.36. The complex interconnectedness of freshwater systems demands that freshwater management be holistic (taking a catchment management approach) and based on a balanced consideration of the needs of people and the environment. The Mar del Plata Action Plan has already recognized the intrinsic linkage between water resource development projects and their significant physical, chemical, biological, health and socio-economic repercussions. The overall environmental health objective was set as follows: "to evaluate the consequences which the various users of water have on the environment, to support measures aimed at controlling water-related diseases, and to protect ecosystems". 1/

18.37. The extent and severity of contamination of unsaturated zones and aquifers have long been underestimated owing to the relative inaccessibility of aquifers and the lack of reliable information on aquifer systems. The protection of groundwater is therefore an essential element of water resource management.

18.38. Three objectives will have to be pursued concurrently to integrate water-quality elements into water resource management:

a. Maintenance of ecosystem integrity, according to a management principle of preserving aquatic ecosystems, including living resources, and of effectively protecting them from any form of degradation on a drainage basin basis;

b. Public health protection, a task requiring not only the provision of safe drinking-water but also the control of disease vectors in the aquatic environment;

c. Human resources development, a key to capacity-building and a prerequisite for implementing water-quality management.

18.39. All States, according to their capacity and available resources, through bilateral or multilateral cooperation, including the United Nations and other relevant organizations as appropriate, could set the following targets:

a. To identify the surface and groundwater resources that could be developed for use on a sustainable basis and other major developable water-dependent resources and, simultaneously, to initiate programmes for the protection, conservation and rational use of these resources on a sustainable basis;

b. To identify all potential sources of water-supply and prepared outlines for their protection, conservation and rational use;

c. To initiate effective water pollution prevention and control programmes, based on an appropriate mixture of pollution reduction-at-source strategies, environmental impact assessments and enforceable standards for major point-source discharges and high-risk non-point sources, commensurate with their socio-economic development;

d. To participate, as far as appropriate, in international water-quality monitoring and management programmes such as the Global Water Quality Monitoring Programme (GEMS/WATER), the UNEP Environmentally Sound Management of Inland Waters (EMINWA), the FAO regional inland fishery bodies, and the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention);

e. To reduce the prevalence of water-associated diseases, starting with the eradication of dracunculiasis (guinea worm disease) and onchocerciasis (river blindness) by the year 2000;

f. To establish, according to capacities and needs, biological, health, physical and chemical quality criteria for all water bodies (surface and groundwater), with a view to an ongoing improvement of water quality;

g. To adopt an integrated approach to environmentally sustainable management of water resources, including the protection of aquatic ecosystems and freshwater living resources;

h. To put in place strategies for the environmentally sound management of freshwaters and related coastal ecosystems, including consideration of fisheries, aquaculture, animal grazing, agricultural activities and biodiversity.

Activities

18.40. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including United Nations and other relevant organizations as appropriate, could implement the following activities:

a. Water resources protection and conservation:

    i. Establishment and strengthening of technical and institutional capacities to identify and protect potential sources of water-supply within all sectors of society;

    ii. Identification of potential sources of water-supply and preparation of national profiles;

    iii. Preparation of national plans for water resources protection and conservation;

    iv. Rehabilitation of important, but degraded, catchment areas, particularly on small islands;

    v. Strengthening of administrative and legislative measures to prevent encroachment on existing and potentially usable catchment areas;

b. Water pollution prevention and control:

    i. Application of the "polluter pays" principle, where appropriate, to all kinds of sources, including on-site and off-site sanitation;

    ii. Promotion of the construction of treatment facilities for domestic sewage and industrial effluents and the development of appropriate technologies, taking into account sound traditional and indigenous practices;

    iii. Establishment of standards for the discharge of effluents and for the receiving waters;

- iv. Introduction of the precautionary approach in water-quality management, where appropriate, with a focus on pollution minimization and prevention through use of new technologies, product and process change, pollution reduction at source and effluent reuse, recycling and recovery, treatment and environmentally safe disposal;
- v. Mandatory environmental impact assessment of all major water resource development projects potentially impairing water quality and aquatic ecosystems, combined with the delineation of appropriate remedial measures and a strengthened control of new industrial installations, solid waste landfills and infrastructure development projects;
- vi. Use of risk assessment and risk management in reaching decisions in this area and ensuring compliance with those decisions;
- vii. Identification and application of best environmental practices at reasonable cost to avoid diffuse pollution, namely, through a limited, rational and planned use of nitrogenous fertilizers and other agrochemicals (pesticides, herbicides) in agricultural practices;
- viii. Encouragement and promotion of the use of adequately treated and purified waste waters in agriculture, aquaculture, industry and other sectors;

c. Development and application of clean technology:

- i. Control of industrial waste discharges, including low-waste production technologies and water recirculation, in an integrated manner and through application of precautionary measures derived from a broad-based life-cycle analysis;
- ii. Treatment of municipal waste water for safe reuse in agriculture and aquaculture;
- iii. Development of biotechnology, inter alia, for waste treatment, production of biofertilizers and other activities;
- iv. Development of appropriate methods for water pollution control, taking into account sound traditional and indigenous practices;

d. Groundwater protection:

- i. Development of agricultural practices that do not degrade groundwaters;
- ii. Application of the necessary measures to mitigate saline intrusion into aquifers of small islands and coastal plains as a consequence of sealevel rise or overexploitation of coastal aquifers;
- iii. Prevention of aquifer pollution through the regulation of toxic substances that permeate the ground and the establishment of protection zones in groundwater recharge and abstraction areas;
- iv. Design and management of landfills based upon sound hydrogeologic information and impact assessment, using the best practicable and best available technology;
- v. Promotion of measures to improve the safety and integrity of wells and well-head areas to reduce intrusion of biological pathogens and hazardous chemicals into aquifers at well sites;
- vi. Water-quality monitoring, as needed, of surface and groundwaters potentially affected by sites storing toxic and hazardous materials;

e. Protection of aquatic ecosystems:

   i. Rehabilitation of polluted and degraded water bodies to restore aquatic habitats and ecosystems;

   ii. Rehabilitation programmes for agricultural lands and for other users, taking into account equivalent action for the protection and use of groundwater resources important for agricultural productivity and for the biodiversity of the tropics;

   iii. Conservation and protection of wetlands (owing to their ecological and habitat importance for many species), taking into account social and economic factors;

   iv. Control of noxious aquatic species that may destroy some other water species;

f. Protection of freshwater living resources:

   i. Control and monitoring of water quality to allow for the sustainable development of inland fisheries;

   ii. Protection of ecosystems from pollution and degradation for the development of freshwater aquaculture projects;

g. Monitoring and surveillance of water resources and waters receiving wastes:

   i. Establishment of networks for the monitoring and continuous surveillance of waters receiving wastes and of point and diffuse sources of pollution;

   ii. Promotion and extension of the application of environmental impact assessments of geographical information systems;

   iii. Surveillance of pollution sources to improve compliance with standards and regulations and to regulate the issue of discharge permits;

   iv. Monitoring of the utilization of chemicals in agriculture that may have an adverse environmental effect;

   v. Rational land use to prevent land degradation, erosion and siltation of lakes and other water bodies;

h. Development of national and international legal instruments that may be required to protect the quality of water resources, as appropriate, particularly for:

   i. Monitoring and control of pollution and its effects in national and transboundary waters;

   ii. Control of long-range atmospheric transport of pollutants;

   iii. Control of accidental and/or deliberate spills in national and/or transboundary water bodies;

   iv. Environmental impact assessment.

Means of implementation

(a) Financing and cost evaluation

18.41. The Conference secretariat has estimated the average total cost (1993-2000) of implementing the activities of this programme to be about $1 billion, including about $340 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude

estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

18.42. States should undertake cooperative research projects to develop solutions to technical problems that are appropriate for the conditions in each watershed or country. States should consider strengthening and developing national research centres linked through networks and supported by regional water research institutes. The North-South twinning of research centres and field studies by international water research institutions should be actively promoted. It is important that a minimum percentage of funds for water resource development projects is allocated to research and development, particularly in externally funded projects.

18.43. Monitoring and assessment of complex aquatic systems often require multidisciplinary studies involving several institutions and scientists in a joint programme. International water-quality programmes, such as GEMS/WATER, should be oriented towards the water-quality of developing countries. User-friendly software and Geographical Information Systems (GIS) and Global Resource Information Database (GRID) methods should be developed for the handling, analysis and interpretation of monitoring data and for the preparation of management strategies.

(c) Human resource development

18.44. Innovative approaches should be adopted for professional and managerial staff training in order to cope with changing needs and challenges. Flexibility and adaptability regarding emerging water pollution issues should be developed. Training activities should be undertaken periodically at all levels within the organizations responsible for water-quality management and innovative teaching techniques adopted for specific aspects of water-quality monitoring and control, including development of training skills, in-service training, problem-solving workshops and refresher training courses.

18.45. Suitable approaches include the strengthening and improvement of the human resource capabilities of local Governments in managing water protection, treatment and use, particularly in urban areas, and the establishment of national and regional technical and engineering courses on the subjects of water-quality protection and control at existing schools and education/training courses on water resources protection and conservation for laboratory and field technicians, women and other water-user groups.

(d) Capacity-building

18.46. The effective protection of water resources and ecosystems from pollution requires considerable upgrading of most countries' present capacities. Water-quality management programmes require a certain minimum infrastructure and staff to identify and implement technical solutions and to enforce regulatory action. One of the key problems today and for the future is the sustained operation and maintenance of these facilities. In order not to allow resources gained from previous investments to deteriorate further, immediate action is required in a number of areas.

D. Drinking-water supply and sanitation

Basis for action

18.47. Safe water-supplies and environmental sanitation are vital for protecting the environment, improving health and alleviating poverty. Safe water is also crucial to many traditional and cultural activities. An estimated 80 per cent of all diseases and over one third of deaths in developing countries are caused by the consumption of contaminated water, and on average as much as one tenth of each person's productive time is sacrificed to water-related diseases. Concerted efforts during the 1980s brought water and sanitation services to hundreds of millions of the world's poorest people.

The most outstanding of these efforts was the launching in 1981 of the International Drinking Water Supply and Sanitation Decade, which resulted from the Mar del Plata Action Plan adopted by the United Nations Water Conference in 1977. The commonly agreed premise was that "all peoples, whatever their stage of development and their social and economic conditions, have the right to have access to drinking water in quantities and of a quality equal to their basic needs". 2/ The target of the Decade was to provide safe drinking-water and sanitation to underserved urban and rural areas by 1990, but even the unprecedented progress achieved during the Decade was not enough. One in three people in the developing world still lacks these two most basic requirements for health and dignity. It is also recognized that human excreta and sewage are important causes of the deterioration of water-quality in developing countries, and the introduction of available technologies, including appropriate technologies, and the construction of sewage treatment facilities could bring significant improvement.

Objectives

18.48. The New Delhi Statement (adopted at the Global Consultation on Safe Water and Sanitation for the 1990s, which was held in New Delhi from 10 to 14 September 1990) formalized the need to provide, on a sustainable basis, access to safe water in sufficient quantities and proper sanitation for all, emphasizing the "some for all rather than more for some" approach. Four guiding principles provide for the programme objectives:

a. Protection of the environment and safeguarding of health through the integrated management of water resources and liquid and solid wastes;

b. Institutional reforms promoting an integrated approach and including changes in procedures, attitudes and behaviour, and the full participation of women at all levels in sector institutions;

c. Community management of services, backed by measures to strengthen local institutions in implementing and sustaining water and sanitation programmes;

d. Sound financial practices, achieved through better management of existing assets, and widespread use of appropriate technologies.

18.49. Past experience has shown that specific targets should be set by each individual country. At the World Summit for Children, in September 1990, heads of State or Government called for both universal access to water-supply and sanitation and the eradication of guinea worm disease by 1995. Even for the more realistic target of achieving full coverage in water-supply by 2025, it is estimated that annual investments must reach double the current levels. One realistic strategy to meet present and future needs, therefore, is to develop lower-cost but adequate services that can be implemented and sustained at the community level.

Activities

18.50. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including the United Nations and other relevant organizations as appropriate, could implement the following activities:

a. Environment and health:

   a. Establishment of protected areas for sources of drinking-water supply;

   b. Sanitary disposal of excreta and sewage, using appropriate systems to treat waste waters in urban and rural areas;

c. Expansion of urban and rural water-supply and development and expansion of rainwater catchment systems, particularly on small islands, in addition to the reticulated water-supply system;

d. Building and expansion, where appropriate, of sewage treatment facilities and drainage systems;

e. Treatment and safe reuse of domestic and industrial waste waters in urban and rural areas;

f. Control of water-associated diseases;

b. People and institutions:

   i. Strengthening of the functioning of Governments in water resources management and, at the same time, giving of full recognition to the role of local authorities;

   ii. Encouragement of water development and management based on a participatory approach, involving users, planners and policy makers at all levels;

   iii. Application of the principle that decisions are to be taken at the lowest appropriate level, with public consultation and involvement of users in the planning and implementation of water projects;

   iv. Human resource development at all levels, including special programmes for women;

   v. Broad-based education programmes, with particular emphasis on hygiene, local management and risk reduction;

   vi. International support mechanisms for programme funding, implementation and follow-up;

c. National and community management:

. Support and assistance to communities in managing their own systems on a sustainable basis;

   i. Encouragement of the local population, especially women, youth, indigenous people and local communities, in water management;

   ii. Linkages between national water plans and community management of local waters;

   iii. Integration of community management of water within the context of overall planning;

   iv. Promotion of primary health and environmental care at the local level, including training for local communities in appropriate water management techniques and primary health care;

   v. Assistance to service agencies in becoming more cost-effective and responsive to consumer needs;

   vi. Providing of more attention to underserved rural and low-income periurban areas;

vii. Rehabilitation of defective systems, reduction of wastage and safe reuse of water and waste water;

viii. Programmes for rational water use and ensured operation and maintenance;

ix. Research and development of appropriate technical solutions;

x. Substantially increase urban treatment capacity commensurate with increasing loads;

d. Awareness creation and public information/participation:

. Strengthening of sector monitoring and information management at subnational and national levels;

i. Annual processing, analysis and publication of monitoring results at national and local levels as a sector management and advocacy/awareness creation tool;

ii. Use of limited sector indicators at regional and global levels to promote the sector and raise funds;

iii. Improvement of sector coordination, planning and implementation, with the assistance of improved monitoring and information management, to increase the sector's absorptive capacity, particularly in community-based self-help projects.

Means of implementation

(a) Financing and cost evaluation

18.51. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $20 billion, including about $7.4 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

18.52. To ensure the feasibility, acceptability and sustainability of planned water-supply services, adopted technologies should be responsive to the needs and constraints imposed by the conditions of the community concerned. Thus, design criteria will involve technical, health, social, economic, provincial, institutional and environmental factors that determine the characteristics, magnitude and cost of the planned system. Relevant international support programmes should address the developing countries concerning, inter alia:

a. Pursuit of low-cost scientific and technological means, as far as practicable;

b. Utilization of traditional and indigenous practices, as far as practicable, to maximize and sustain local involvement;

c. Assistance to country-level technical/scientific institutes to facilitate curricula development to support fields critical to the water and sanitation sector.

(c) Human resource development

18.53. To effectively plan and manage water-supply and sanitation at the national, provincial, district and community level, and to utilize funds most effectively, trained professional and technical staff must be developed within each country in sufficient numbers. To do this, countries must establish manpower development plans, taking into consideration present requirements and planned developments. Subsequently, the development and performance of country-level training institutions should be enhanced so that they can play a pivotal role in capacity-building. It is also important that countries provide adequate training for women in the sustainable maintenance of equipment, water resources management and environmental sanitation.

(d) Capacity-building

18.54. The implementation of water-supply and sanitation programmes is a national responsibility. To varying degrees, responsibility for the implementation of projects and the operating of systems should be delegated to all administrative levels down to the community and individual served. This also means that national authorities, together with the agencies and bodies of the United Nations system and other external support agencies providing support to national programmes, should develop mechanisms and procedures to collaborate at all levels. This is particularly important if full advantage is to be taken of community-based approaches and self-reliance as tools for sustainability. This will entail a high degree of community participation, involving women, in the conception, planning, decision-making, implementation and evaluation connected with projects for domestic water-supply and sanitation.

18.55. Overall national capacity-building at all administrative levels, involving institutional development, coordination, human resources, community participation, health and hygiene education and literacy, has to be developed according to its fundamental connection both with any efforts to improve health and socio-economic development through water-supply and sanitation and with their impact on the human environment. Capacity-building should therefore be one of the underlying keys in implementation strategies. Institutional capacity-building should be considered to have an importance equal to that of the sector supplies and equipment component so that funds can be directed to both. This can be undertaken at the planning or programme/project formulation stage, accompanied by a clear definition of objectives and targets. In this regard, technical cooperation among developing countries owing to their available wealth of information and experience and the need to avoid "reinventing the wheel", is crucial. Such a course has proved cost-effective in many country projects already.

E. Water and sustainable urban development

Basis for action

18.56. Early in the next century, more than half of the world's population will be living in urban areas. By the year 2025, that proportion will have risen to 60 per cent, comprising some 5 billion people. Rapid urban population growth and industrialization are putting severe strains on the water resources and environmental protection capabilities of many cities. Special attention needs to be given to the growing effects of urbanization on water demands and usage and to the critical role played by local and municipal authorities in managing the supply, use and overall treatment of water, particularly in developing countries for which special support is needed. Scarcity of freshwater resources and the escalating costs of developing new resources have a considerable impact on national industrial, agricultural and human settlement development and economic growth. Better management of urban water resources, including the elimination of unsustainable consumption patterns, can make a substantial contribution to the alleviation of poverty and improvement of the health and quality of life of the urban and rural poor. A high proportion of large urban agglomerations are located around estuaries and in coastal zones. Such an arrangement leads to pollution from municipal and industrial discharges combined with overexploitation of available water resources and threatens the marine environment and the supply of freshwater resources.

Objectives

18.57. The development objective of this programme is to support local and central Governments' efforts and capacities to sustain national development and productivity through environmentally sound management of water resources for urban use. Supporting this objective is the identification and implementation of strategies and actions to ensure the continued supply of affordable water for present and future needs and to reverse current trends of resource degradation and depletion.

18.58. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including the United Nations and other relevant organizations as appropriate, could set the following targets:

a. By the year 2000, to have ensured that all urban residents have access to at least 40 litres per capita per day of safe water and that 75 per cent of the urban population are provided with on-site or community facilities for sanitation;

b. By the year 2000, to have established and applied quantitative and qualitative discharge standards for municipal and industrial effluents;

c. By the year 2000, to have ensured that 75 per cent of solid waste generated in urban areas are collected and recycled or disposed of in an environmentally safe way.

Activities

18.59. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including the United Nations and other relevant organizations as appropriate, could implement the following activities:

a. Protection of water resources from depletion, pollution and degradation:

  i. Introduction of sanitary waste disposal facilities based on environmentally sound low-cost and upgradable technologies;

  ii. Implementation of urban storm-water run-off and drainage programmes;

  iii. Promotion of recycling and reuse of waste water and solid wastes;

  iv. Control of industrial pollution sources to protect water resources;

  v. Protection of watersheds with respect to depletion and degradation of their forest cover and from harmful upstream activities;

  vi. Promotion of research into the contribution of forests to sustainable water resources development;

  vii. Encouragement of the best management practices for the use of agrochemicals with a view to minimizing their impact on water resources;

b. Efficient and equitable allocation of water resources:

  i. Reconciliation of city development planning with the availability and sustainability of water resources;

  ii. Satisfaction of the basic water needs of the urban population;

  iii. Introduction of water tariffs, taking into account the circumstances in each country and where affordable, that reflect the marginal and opportunity cost of water, especially for productive activities;

c. Institutional/legal/management reforms:

  i. Adoption of a city-wide approach to the management of water resources;

  ii. Promotion at the national and local level of the elaboration of land-use plans that give due consideration to water resources development;

    iii. Utilization of the skills and potential of non-governmental organizations, the private sector and local people, taking into account the public's and strategic interests in water resources;

d. Promotion of public participation:

    i. Initiation of public-awareness campaigns to encourage the public's move towards rational water utilization;

    ii. Sensitization of the public to the issue of protecting water quality within the urban environment;

    iii. Promotion of public participation in the collection, recycling and elimination of wastes;

e. Support to local capacity-building:

    i. Development of legislation and policies to promote investments in urban water and waste management, reflecting the major contribution of cities to national economic development;

    ii. Provision of seed money and technical support to the local handling of materials supply and services;

    iii. Encouragement, to the extent possible, of autonomy and financial viability of city water, solid waste and sewerage utilities;

    iv. Creation and maintenance of a cadre of professionals and semi-professionals, for water, waste-water and solid waste management;

f. Provision of enhanced access to sanitary services:

    i. Implementation of water, sanitation and waste management programmes focused on the urban poor;

    ii. Making available of low-cost water-supply and sanitation technology choices;

    iii. Basing of choice of technology and service levels on user preferences and willingness to pay;

    iv. Mobilization and facilitation of the active involvement of women in water management teams;

    v. Encouragement and equipment of local water associations and water committees to manage community water-supply systems and communal latrines, with technical back-up available when required;

    vi. Consideration of the merits and practicality of rehabilitating existing malfunctioning systems and of correcting operation and maintenance inadequacies.

Means of implementation

(a) Financing and cost evaluation

18.60. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $20 billion, including about $4.5 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial

terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

18.61. The 1980s saw considerable progress in the development and application of low-cost water-supply and sanitation technologies. The programme envisages continuation of this work, with particular emphasis on development of appropriate sanitation and waste disposal technologies for low-income high-density urban settlements. There should also be international information exchange, to ensure a widespread recognition among sector professionals of the availability and benefits of appropriate low-cost technologies. The public-awareness campaigns will also include components to overcome user resistance to second-class services by emphasizing the benefits of reliability and sustainability.

(c) Human resource development

18.62. Implicit in virtually all elements of this programme is the need for progressive enhancement of the training and career development of personnel at all levels in sector institutions. Specific programme activities will involve the training and retention of staff with skills in community involvement, low-cost technology, financial management, and integrated planning of urban water resources management. Special provision should be made for mobilizing and facilitating the active participation of women, youth, indigenous people and local communities in water management teams and for supporting the development of water associations and water committees, with appropriate training of such personnel as treasurers, secretaries and caretakers. Special education and training programmes for women should be launched with regard to the protection of water resources and water-quality within urban areas.

(d) Capacity-building

18.63. In combination with human resource development, strengthening of institutional, legislative and management structures are key elements of the programme. A prerequisite for progress in enhancing access to water and sanitation services is the establishment of an institutional framework that ensures that the real needs and potential contributions of currently unserved populations are reflected in urban development planning. The multisectoral approach, which is a vital part of urban water resources management, requires institutional linkages at the national and city levels, and the programme includes proposals for establishing intersectoral planning groups. Proposals for greater pollution control and prevention depend for their success on the right combination of economic and regulatory mechanisms, backed by adequate monitoring and surveillance and supported by enhanced capacity to address environmental issues on the part of local Governments.

18.64. Establishment of appropriate design standards, water-quality objectives and discharge consents is therefore among the proposed activities. The programme also includes support for strengthening the capability of water and sewerage agencies and for developing their autonomy and financial viability. Operation and maintenance of existing water and sanitation facilities have been recognized as entailing a serious shortcoming in many countries. Technical and financial support are needed to help countries correct present inadequacies and build up the capacity to operate and maintain rehabilitated and new systems.

F. Water for sustainable food production and rural development

Basis for action

18.65. Sustainability of food production increasingly depends on sound and efficient water use and conservation practices consisting primarily of irrigation development and management, including water management with respect to rain-fed areas, livestock water-supply, inland fisheries and agro-forestry. Achieving food security is a high priority in many countries, and agriculture must not only provide food for rising populations, but also save water for other uses. The challenge is to develop and apply water-saving technology and management methods and, through capacity-building, enable communities to introduce institutions and incentives for the rural population to adopt new approaches, for both rain-fed and irrigated agriculture. The rural population must also have better access to a potable water-supply and to sanitation services. It is an immense task but not an impossible one, provided appropriate policies and programmes are adopted at all levels - local, national and international. While significant expansion of the area under rain-fed agriculture has been achieved during the past decade, the productivity response and sustainability of irrigation systems have been constrained by problems of waterlogging and salinization. Financial and market constraints are also a common problem. Soil erosion, mismanagement and overexploitation of natural resources and acute competition for water have all influenced the extent of poverty, hunger and famine in the developing countries. Soil erosion caused by overgrazing of livestock is also often responsible for the siltation of lakes. Most often, the development of irrigation schemes is supported neither by environmental impact assessments identifying hydrologic consequences within watersheds of interbasin transfers, nor by the assessment of social impacts on peoples in river valleys.

18.66. The non-availability of water-supplies of suitable quality is a significant limiting factor to livestock production in many countries, and improper disposal of animal wastes can in certain circumstances result in pollution of water-supplies for both humans and animals. The drinking-water requirements of livestock vary according to species and the environment in which they are kept. It is estimated that the current global livestock drinking-water requirement is about 60 billion litres per day and based on livestock population growth estimates, this daily requirement is predicted to increase by 0.4 billion litres per annum in the foreseeable future.

18.67. Freshwater fisheries in lakes and streams are an important source of food and protein. Fisheries of inland waters should be so managed as to maximize the yield of aquatic food organisms in an environmentally sound manner. This requires the conservation of water-quality and quantity, as well as of the functional morphology of the aquatic environment. On the other hand, fishing and aquaculture may themselves damage the aquatic ecosystem; hence their development should conform to guidelines for impact limitation. Present levels of production from inland fisheries, from both fresh and brackish water, are about 7 million tons per year and could increase to 16 million tons per year by the year 2000; however, any increase in environmental stress could jeopardize this rise.

Objectives

18.68. The key strategic principles for holistic and integrated environmentally sound management of water resources in the rural context may be set forth as follows:

a. Water should be regarded as a finite resource having an economic value with significant social and economic implications reflecting the importance of meeting basic needs;

b. Local communities must participate in all phases of water management, ensuring the full involvement of women in view of their crucial role in the practical day-to-day supply, management and use of water;

c. Water resource management must be developed within a comprehensive set of policies for (i) human health; (ii) food production, preservation and distribution; (iii) disaster mitigation plans; (iv) environmental protection and conservation of the natural resource base;

d. It is necessary to recognize and actively support the role of rural populations, with particular emphasis on women.

18.69. An International Action Programme on Water and Sustainable Agricultural Development (IAP-WASAD) has been initiated by FAO in cooperation with other international organizations. The main objective of the Action Programme is to assist developing countries in planning, developing and managing water resources on an integrated basis to meet present and future needs for agricultural production, taking into account environmental considerations.

18.70. The Action Programme has developed a framework for sustainable water use in the agricultural sector and identified priority areas for action at national, regional and global levels. Quantitative targets for new irrigation development, improvement of existing irrigation schemes and reclamation of waterlogged and salinized lands through drainage for 130 developing countries are estimated on the basis of food requirements, agro-climatic zones and availability of water and land.

18.71. FAO global projections for irrigation, drainage and small-scale water programmes by the year 2000 for 130 developing countries are as follows: (a) 15.2 million hectares of new irrigation development; (b) 12 million hectares of improvement/modernization of existing schemes; (c) 7 million hectares installed with drainage and water control facilities; and (d) 10 million hectares of small-scale water programmes and conservation.

18.72. The development of new irrigation areas at the above-mentioned level may give rise to environmental concerns in so far as it implies the destruction of wetlands, water pollution, increased sedimentation and a reduction in biodiversity. Therefore, new irrigation schemes should be accompanied by an environmental impact assessment, depending upon the scale of the scheme, in case significant negative environmental impacts are expected. When considering proposals for new irrigation schemes, consideration should also be given to a more rational exploitation, and an increase in the efficiency or productivity, of any existing schemes capable of serving the same localities. Technologies for new irrigation schemes should be thoroughly evaluated, including their potential conflicts with other land uses. The active involvement of water-users groups is a supporting objective.

18.73. It should be ensured that rural communities of all countries, according to their capacities and available resources and taking advantage of international cooperation as appropriate, will have access to safe water in sufficient quantities and adequate sanitation to meet their health needs and maintain the essential qualities of their local environments.

18.74. The objectives with regard to water management for inland fisheries and aquaculture include conservation of water-quality and water-quantity requirements for optimum production and prevention of water pollution by aquacultural activities. The Action Programme seeks to assist member countries in managing the fisheries of inland waters through the promotion of sustainable management of capture fisheries as well as the development of environmentally sound approaches to intensification of aquaculture.

18.75. The objectives with regard to water management for livestock supply are twofold: provision of adequate amounts of drinking-water and safeguarding of drinking-water quality in accordance with the specific needs of different animal species. This entails maximum salinity tolerance levels and the absence of pathogenic organisms. No global targets can be set owing to large regional and intra-country variations.

Activities

18.76. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including the United Nations and other relevant organizations as appropriate, could implement the following activities:

a. Water-supply and sanitation for the unserved rural poor:

   i. Establish national policies and budget priorities with regard to increasing service coverage;

   ii. Promote appropriate technologies;

   iii. Introduce suitable cost-recovery mechanisms, taking into account efficiency and equity through demand management mechanisms;

    iv. Promote community ownership and rights to water-supply and sanitation facilities;
    v. Establish monitoring and evaluation systems;
    vi. Strengthen the rural water-supply and sanitation sector with emphasis on institutional development, efficient management and an appropriate framework for financing of services;
    vii. Increase hygiene education and eliminate disease transmission foci;
    viii. Adopt appropriate technologies for water treatment;
    ix. Adopt wide-scale environmental management measures to control disease vectors;

b. Water-use efficiency:
    i. Increase of efficiency and productivity in agricultural water use for better utilization of limited water resources;
    ii. Strengthen water and soil management research under irrigation and rain-fed conditions;
    iii. Monitor and evaluate irrigation project performance to ensure, inter alia, the optimal utilization and proper maintenance of the project;
    iv. Support water-users groups with a view to improving management performance at the local level;
    v. Support the appropriate use of relatively brackish water for irrigation;

c. Waterlogging, salinity control and drainage:
    i. Introduce surface drainage in rain-fed agriculture to prevent temporary waterlogging and flooding of lowlands;
    ii. Introduce artificial drainage in irrigated and rain-fed agriculture;
    iii. Encourage conjunctive use of surface and groundwaters, including monitoring and water-balance studies;
    iv. Practise drainage in irrigated areas of arid and semi-arid regions;

d. Water-quality management:
    i. Establish and operate cost-effective water-quality monitoring systems for agricultural water uses;
    ii. Prevent adverse effects of agricultural activities on water-quality for other social and economic activities and on wetlands, inter alia, through optimal use of on-farm input and the minimization of the use of external input in agricultural activities;
    iii. Establish biological, physical and chemical water-quality criteria for agricultural water-users and for marine and riverine ecosystems;
    iv. Minimize soil run-off and sedimentation;
    v. Dispose properly of sewage from human settlements and of manure produced by intensive livestock breeding;

vi. Minimize adverse effects from agricultural chemicals by use of integrated pest management;

vii. Educate communities about the pollution-related impacts of the use of fertilizers and chemicals on water-quality, food safety and human health;

e. Water resources development programmes:

i. Develop small-scale irrigation and water-supply for humans and livestock and for water and soil conservation;

ii. Formulate large-scale and long-term irrigation development programmes, taking into account their effects on the local level, the economy and the environment;

iii. Promote local initiatives for the integrated development and management of water resources;

iv. Provide adequate technical advice and support and enhancement of institutional collaboration at the local community level;

v. Promote a farming approach for land and water management that takes account of the level of education, the capacity to mobilize local communities and the ecosystem requirements of arid and semi-arid regions;

vi. Plan and develop multi-purpose hydroelectric power schemes, making sure that environmental concerns are duly taken into account;

f. Scarce water resources management:

i. Develop long-term strategies and practical implementation programmes for agricultural water use under scarcity conditions with competing demands for water;

ii. Recognize water as a social, economic and strategic good in irrigation planning and management;

iii. Formulate specialized programmes focused on drought preparedness, with emphasis on food scarcity and environmental safeguards;

iv. Promote and enhance waste-water reuse in agriculture;

g. Water-supply for livestock:

i. Improve quality of water available to livestock, taking into account their tolerance limits;

ii. Increase the quantity of water sources available to livestock, in particular those in extensive grazing systems, in order to both reduce the distance needed to travel for water and to prevent overgrazing around water sources;

iii. Prevent contamination of water sources with animal excrement in order to prevent the spread of diseases, in particular zoonosis;

iv. Encourage multiple use of water-supplies through promotion of integrated agro-livestock-fishery systems;

v. Encourage water spreading schemes for increasing water retention of extensive grasslands to stimulate forage production and prevent run-off;

h. Inland fisheries:

   i. Develop the sustainable management of fisheries as part of national water resources planning;

   ii. Study specific aspects of the hydrobiology and environmental requirements of key inland fish species in relation to varying water regimes;

   iii. Prevent or mitigate modification of aquatic environments by other users or rehabilitate environments subjected to such modification on behalf of the sustainable use and conservation of biological diversity of living aquatic resources;

   iv. Develop and disseminate environmentally sound water resources development and management methodologies for the intensification of fish yield from inland waters;

   v. Establish and maintain adequate systems for the collection and interpretation of data on water quality and quantity and channel morphology related to the state and management of living aquatic resources, including fisheries;

i. Aquaculture development:

   i. Develop environmentally sound aquaculture technologies that are compatible with local, regional and national water resources management plans and take into consideration social factors;

   ii. Introduce appropriate aquaculture techniques and related water development and management practices in countries not yet experienced in aquaculture;

   iii. Assess environmental impacts of aquaculture with specific reference to commercialized culture units and potential water pollution from processing centres;

   iv. Evaluate economic feasibility of aquaculture in relation to alternative use of water, taking into consideration the use of marginal-quality water and investment and operational requirements.

Means of implementation

(a) Financing and cost evaluation

18.77. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $13.2 billion, including about $4.5 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

18.78. There is an urgent need for countries to monitor water resources and water-quality, water and land use and crop production; compile inventories of type and extent of agricultural water development and of present and future contributions to sustainable agricultural development; evaluate the potential for fisheries and aquaculture development; and improve the availability and dissemination of data to planners, technicians, farmers and fishermen. Priority requirements for research are as follows:

   a. Identification of critical areas for water-related adaptive research;

   b. Strengthening of the adaptive research capacities of institutions in developing countries;

c. Enhancement of translation of water-related farming and fishing systems research results into practical and accessible technologies and provision of the support needed for their rapid adoption at the field level.

18.79. Transfer of technology, both horizontal and vertical, needs to be strengthened. Mechanisms to provide credit, input supplies, markets, appropriate pricing and transportation must be developed jointly by countries and external support agencies. Integrated rural water-supply infrastructure, including facilities for water-related education and training and support services for agriculture, should be expanded for multiple uses and should assist in developing the rural economy.

(c) Human resource development

18.80. Education and training of human resources should be actively pursued at the national level through: (a) assessment of current and long-term human resources management and training needs; (b) establishment of a national policy for human resources development; and (c) initiation and implementation of training programmes for staff at all levels as well as for farmers. The necessary actions are as follows:

a. Assess training needs for agricultural water management;

b. Increase formal and informal training activities;

c. Develop practical training courses for improving the ability of extension services to disseminate technologies and strengthen farmers' capabilities, with special reference to small-scale producers;

d. Train staff at all levels, including farmers, fishermen and members of local communities, with particular reference to women;

e. Increase the opportunities for career development to enhance the capabilities of administrators and officers at all levels involved in land- and water-management programmes.

(d) Capacity-building

18.81. The importance of a functional and coherent institutional framework at the national level to promote water and sustainable agricultural development has generally been fully recognized at present. In addition, an adequate legal framework of rules and regulations should be in place to facilitate actions on agricultural water-use, drainage, water-quality management, small-scale water programmes and the functioning of water-users' and fishermen's associations. Legislation specific to the needs of the agricultural water sector should be consistent with, and stem from, general legislation for the management of water resources. Actions should be pursued in the following areas:

a. Improvement of water-use policies related to agriculture, fisheries and rural development and of legal frameworks for implementing such policies;

b. Review, strengthening and restructuring, if required, of existing institutions in order to enhance their capacities in water-related activities, while recognizing the need to manage water resources at the lowest appropriate level;

c. Review and strengthening, where necessary, of organizational structure, functional relationships and linkages among ministries and departments within a given ministry;

d. Provision of specific measures that require support for institutional strengthening, inter alia, through long-term programme budgeting, staff training, incentives, mobility, equipment and coordination mechanisms;

e. Enhancement of involvement of the private sector, where appropriate, in human resource development and provision of infrastructure;

f. Transfer of existing and new water-use technologies by creating mechanisms for cooperation and information exchange among national and regional institutions.

G. Impacts of climate change on water resources

Basis for action

18.82. There is uncertainty with respect to the prediction of climate change at the global level. Although the uncertainties increase greatly at the regional, national and local levels, it is at the national level that the most important decisions would need to be made. Higher temperatures and decreased precipitation would lead to decreased water-supplies and increased water demands; they might cause deterioration in the quality of freshwater bodies, putting strains on the already fragile balance between supply and demand in many countries. Even where precipitation might increase, there is no guarantee that it would occur at the time of year when it could be used; in addition, there might be a likelihood of increased flooding. Any rise in sealevel will often cause the intrusion of salt water into estuaries, small islands and coastal aquifers and the flooding of low-lying coastal areas; this puts low-lying countries at great risk.

18.83. The Ministerial Declaration of the Second World Climate Conference states that "the potential impact of such climate change could pose an environmental threat of an up to now unknown magnitude ... and could even threaten survival in some small island States and in low-lying coastal, arid and semi-arid areas". 3/ The Conference recognized that among the most important impacts of climate change were its effects on the hydrologic cycle and on water management systems and, through these, on socio-economic systems. Increase in incidence of extremes, such as floods and droughts, would cause increased frequency and severity of disasters. The Conference therefore called for a strengthening of the necessary research and monitoring programmes and the exchange of relevant data and information, these actions to be undertaken at the national, regional and international levels.

Objectives

18.84. The very nature of this topic calls first and foremost for more information about and greater understanding of the threat being faced. This topic may be translated into the following objectives, consistent with the United Nations Framework Convention on Climate Change:

i. To understand and quantify the threat of the impact of climate change on freshwater resources;

ii. To facilitate the implementation of effective national countermeasures, as and when the threatening impact is seen as sufficiently confirmed to justify such action;

iii. To study the potential impacts of climate change on areas prone to droughts and floods.

Activities

18.85. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including the United Nations and other relevant organizations as appropriate, could implement the following activities:

a. Monitor the hydrologic regime, including soil moisture, groundwater balance, penetration and transpiration of water-quality, and related climate factors, especially in the regions and countries most likely to suffer from the adverse effects of climate change and where the localities vulnerable to these effects should therefore be defined;

b. Develop and apply techniques and methodologies for assessing the potential adverse effects of climate change, through changes in temperature, precipitation and sealevel rise, on freshwater resources and the flood risk;

c. Initiate case-studies to establish whether there are linkages between climate changes and the current occurrences of droughts and floods in certain regions;

d. Assess the resulting social, economic and environmental impacts;

e. Develop and initiate response strategies to counter the adverse effects that are identified, including changing groundwater levels and to mitigate saline intrusion into aquifers;

f. Develop agricultural activities based on brackish-water use;

g. Contribute to the research activities under way within the framework of current international programmes.

Means of implementation

(a) Financing and cost evaluation

18.86. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $100 million, including about $40 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

18.87. Monitoring of climate change and its impact on freshwater bodies must be closely integrated with national and international programmes for monitoring the environment, in particular those concerned with the atmosphere, as discussed under other sections of Agenda 21, and the hydrosphere, as discussed under programme area B above. The analysis of data for indication of climate change as a basis for developing remedial measures is a complex task. Extensive research is necessary in this area and due account has to be taken of the work of the Intergovernmental Panel on Climate Change (IPCC), the World Climate Programme, the International Geosphere-Biosphere Programme (IGBP) and other relevant international programmes.

18.88. The development and implementation of response strategies requires innovative use of technological means and engineering solutions, including the installation of flood and drought warning systems and the construction of new water resource development projects such as dams, aqueducts, well fields, waste-water treatment plants, desalination works, levees, banks and drainage channels. There is also a need for coordinated research networks such as the International Geosphere-Biosphere Programme/Global Change System for Analysis, Research and Training (IGBP/START) network.

(c) Human resource development

18.89. The developmental work and innovation depend for their success on good academic training and staff motivation. International projects can help by enumerating alternatives, but each country needs to establish and implement the necessary policies and to develop its own expertise in the scientific and engineering challenges to be faced, as well as a body of dedicated individuals who are able to interpret the complex issues concerned for those required to make policy decisions. Such specialized personnel need to be trained, hired and retained in service, so that they may serve their countries in these tasks.

(d) Capacity-building

18.90. There is a need, however, to build a capacity at the national level to develop, review and implement response strategies. Construction of major engineering works and installation of forecasting systems will require significant strengthening of the agencies responsible, whether in the public or the private sector. Most critical is the requirement for a socio-economic mechanism that can review predictions of the impact of climate change and possible response strategies and make the necessary judgements and decisions.

Notes

1/ Report of the United Nations Water Conference, Mar del Plata, 14-25 March 1977 (United Nations publication, Sales No. E.77.II.A.12), part one, chap. I, sect. C, para. 35.

2/ Ibid., part one, chap. I, resolution II.

3/ A/45/696/Add.1, annex III, preamble, para. 2.

Agenda 21 – Chapter 19

ENVIRONMENTALLY SOUND MANAGEMENT OF TOXIC CHEMICALS, INCLUDING PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN TOXIC AND DANGEROUS PRODUCTS

19.1. A substantial use of chemicals is essential to meet the social and economic goals of the world community and today's best practice demonstrates that they can be used widely in a cost-effective manner and with a high degree of safety. However, a great deal remains to be done to ensure the environmentally sound management of toxic chemicals, within the principles of sustainable development and improved quality of life for humankind. Two of the major problems, particularly in developing countries, are (a) lack of sufficient scientific information for the assessment of risks entailed by the use of a great number of chemicals, and (b) lack of resources for assessment of chemicals for which data are at hand.

19.2. Gross chemical contamination, with grave damage to human health, genetic structures and reproductive outcomes, and the environment, has in recent times been continuing within some of the world's most important industrial areas. Restoration will require major investment and development of new techniques. The long-range effects of pollution, extending even to the fundamental chemical and physical processes of the Earth's atmosphere and climate, are becoming understood only recently and the importance of those effects is becoming recognized only recently as well.

19.3. A considerable number of international bodies are involved in work on chemical safety. In many countries work programmes for the promotion of chemical safety are in place. Such work has international implications, as chemical risks do not respect national boundaries. However, a significant strengthening of both national and international efforts is needed to achieve an environmentally sound management of chemicals.

19.4. Six programme areas are proposed:

a. Expanding and accelerating international assessment of chemical risks;

b. Harmonization of classification and labelling of chemicals;

c. Information exchange on toxic chemicals and chemical risks;

d. Establishment of risk reduction programmes;

e. Strengthening of national capabilities and capacities for management of chemicals;

f. Prevention of illegal international traffic in toxic and dangerous products.

In addition, the short final subsection G deals with the enhancement of cooperation related to several programme areas.

19.5. The six programme areas are together dependent for their successful implementation on intensive international work and improved coordination of current international activities, as well as on the identification and application of technical, scientific, educational and financial means, in particular for developing countries. To varying degrees, the programme areas involve hazard assessment (based on the intrinsic properties of chemicals), risk assessment (including assessment of exposure), risk acceptability and risk management.

19.6. Collaboration on chemical safety between the United Nations Environment Programme (UNEP), the International Labour Organisation (ILO) and the World Health Organization (WHO) in the International Programme on Chemical Safety (IPCS) should be the nucleus for international cooperation on environmentally sound management of toxic chemicals. All efforts should be made to strengthen this programme. Cooperation with other programmes, such as those of the Organisation for Economic Cooperation and Development (OECD) and the European Communities (EC) and other regional and governmental chemical programmes, should be promoted.

19.7. Increased coordination of United Nations bodies and other international organizations involved in chemicals assessment and management should be further promoted. Within the framework of IPCS, an intergovernmental meeting, convened by the Executive Director of UNEP, was held in London in December 1991 to further explore this matter (see paras. 19.75 and 19.76).

19.8. The broadest possible awareness of chemical risks is a prerequisite for achieving chemical safety. The principle of the right of the community and of workers to know those risks should be recognized. However, the right to know the identity of hazardous ingredients should be balanced with industry's right to protect confidential business information. (Industry, as referred to in this chapter, shall be taken to include large industrial enterprises and transnational corporations as well as domestic industries.) The industry initiative on responsible care and product stewardship should be developed and promoted. Industry should apply adequate standards of operation in all countries in order not to damage human health and the environment.

19.9. There is international concern that part of the international movement of toxic and dangerous products is being carried out in contravention of existing national legislation and international instruments, to the detriment of the environment and public health of all countries, particularly developing countries.

19.10. In resolution 44/226 of 22 December 1989, the General Assembly requested each regional commission, within existing resources, to contribute to the prevention of the illegal traffic in toxic and dangerous products and wastes by monitoring and making regional assessments of that illegal traffic and its environmental and health implications. The Assembly also requested the regional commissions to interact among themselves and to cooperate with the United Nations Environment Programme, with a view to maintaining efficient and coordinated monitoring and assessment of the illegal traffic in toxic and dangerous products and wastes.

PROGRAMME AREAS

A. Expanding and accelerating international assessment of chemical risks

19.11. Assessing the risks to human health and the environment hazards that a chemical may cause is a prerequisite to planning for its safe and beneficial use. Among the approximately 100,000 chemical substances in commerce and the thousands of substances of natural origin with which human beings come into contact, many appear as pollutants and contaminants in food, commercial products and the various environmental media. Fortunately, exposure to most chemicals (some 1,500 cover over 95 per cent of total world production) is rather limited, as most are used in very small amounts. However, a serious problem is that even for a great number of chemicals characterized by high-volume production, crucial data for risk assessment are often lacking. Within the framework of the OECD chemicals programme such data are now being generated for a number of chemicals.

19.12. Risk assessment is resource-intensive. It could be made cost-effective by strengthening international cooperation and better coordination, thereby making the best use of available resources and avoiding unnecessary duplication of effort. However, each nation should have a critical mass of technical staff with experience in toxicity testing and exposure analysis, which are two important components of risk assessment.

Objectives

19.13. The objectives of this programme area are:

a. To strengthen international risk assessment. Several hundred priority chemicals or groups of chemicals, including major pollutants and contaminants of global significance, should be assessed by the year 2000, using current selection and assessment criteria;

b. To produce guidelines for acceptable exposure for a greater number of toxic chemicals, based on peer review and scientific consensus distinguishing between health- or environment-based exposure limits and those relating to socio-economic factors.

Activities

(a) Management-related activities

19.14. Governments, through the cooperation of relevant international organizations and industry, where appropriate, should:

a. Strengthen and expand programmes on chemical risk assessment within the United Nations system IPCS (UNEP, ILO, WHO) and the Food and Agriculture Organization of the United Nations (FAO), together with other organizations, including the Organisation for Economic Cooperation and Development (OECD), based on an agreed approach to data-quality assurance, application of assessment criteria, peer review and linkages to risk management activities, taking into account the precautionary approach;

b. Promote mechanisms to increase collaboration among Governments, industry, academia and relevant non-governmental organizations involved in the various aspects of risk assessment of chemicals and related processes, in particular the promoting and coordinating of research activities to improve understanding of the mechanisms of action of toxic chemicals;

c. Encourage the development of procedures for the exchange by countries of their assessment reports on chemicals with other countries for use in national chemical assessment programmes.

(b) Data and information

19.15. Governments, through the cooperation of relevant international organizations and industry, where appropriate, should:

a. Give high priority to hazard assessment of chemicals, that is, of their intrinsic properties as the appropriate basis for risk assessment;

b. Generate data necessary for assessment, building, inter alia, on programmes of IPCS (UNEP, WHO, ILO), FAO, OECD and EC and on established programmes other regions and Governments. Industry should participate actively.

19.16. Industry should provide data for substances produced that are needed specifically for the assessment of potential risks to human health and the environment. Such data should be made available to relevant national competent authorities and international bodies and other interested parties involved in hazard and risk assessment, and to the greatest possible extent to the public also, taking into account legitimate claims of confidentiality.

(c) International and regional cooperation and coordination

19.17. Governments, through the cooperation of relevant international organizations and industry, where appropriate, should:

a. Develop criteria for priority-setting for chemicals of global concern with respect to assessment;

b. Review strategies for exposure assessment and environmental monitoring to allow for the best use of available resources, to ensure compatibility of data and to encourage coherent national and international strategies for that assessment.

Means of implementation

(a) Financial and cost evaluation

19.18. Most of the data and methods for chemical risk assessment are generated in the developed countries and an expansion and acceleration of the assessment work will call for a considerable increase in research and safety testing by industry and research institutions. The cost projections address the needs to strengthen the capacities of relevant United Nations bodies and are based on current experience in IPCS. It should be noted that there are considerable costs, often not possible to quantify, that are not included. These comprise costs to industry and Governments of generating the safety data underlying the assessments and costs to Governments of providing background documents and draft assessment statements to IPCS, the International Register of Potentially Toxic Chemicals (IRPTC) and OECD. They also include the cost of accelerated work in non-United Nations bodies such as OECD and EC.

19.19. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $30 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

19.20. Major research efforts should be launched in order to improve methods for assessment of chemicals as work towards a common framework for risk assessment and to improve procedures for using toxicological and epidemiological data to predict the effects of chemicals on human health and the environment, so as to enable decision makers to adopt adequate policies and measures to reduce risks posed by chemicals.

19.21. Activities include:

a. Strengthening research on safe/safer alternatives to toxic chemicals that pose an unreasonable and otherwise unmanageable risk to the environment or human health and to those that are toxic, persistent and bio-accumulative and that cannot be adequately controlled;

b. Promotion of research on, and validation of, methods constituting a replacement for those using test animals (thus reducing the use of animals for testing purposes);

c. Promotion of relevant epidemiological studies with a view to establishing a cause-and-effect relationship between exposure to chemicals and the occurrence of certain diseases;

d. Promotion of ecotoxicological studies with the aim of assessing the risks of chemicals to the environment.

(c) Human resource development

19.22. International organizations, with the participation of Governments and non-governmental organizations, should launch training and education projects involving women and children, who are at greatest risk, in order to enable countries, and particularly developing countries, to make maximum national use of international assessments of chemical risks.

(d) Capacity-building

19.23. International organizations, building on past, present and future assessment work, should support countries, particularly developing countries, in developing and strengthening risk assessment capabilities at national and regional levels to minimize, and as far as possible control and prevent, risk in the manufacturing and use of toxic and hazardous chemicals. Technical cooperation and financial support or other contributions should be given to activities aimed at expanding and accelerating the national and international assessment and control of chemical risks to enable the best choice of chemicals.

B. Harmonization of classification and labelling of chemicals

Basis for action

19.24. Adequate labelling of chemicals and the dissemination of safety data sheets such as ICSCs (International Chemical Safety Cards) and similarly written materials, based on assessed hazards to health and environment, are the simplest and most efficient way of indicating how to handle and use chemicals safely.

19.25. For the safe transport of dangerous goods, including chemicals, a comprehensive scheme elaborated within the United Nations system is in current use. This scheme mainly takes into account the acute hazards of chemicals.

19.26. Globally harmonized hazard classification and labelling systems are not yet available to promote the safe use of chemicals, inter alia, at the workplace or in the home. Classification of chemicals can be made for different purposes and is a particularly important tool in establishing labelling systems. There is a need to develop harmonized hazard classification and labelling systems, building on ongoing work.

Objectives

19.27. A globally harmonized hazard classification and compatible labelling system, including material safety data sheets and easily understandable symbols, should be available, if feasible, by the year 2000.

Activities

(a) Management-related activities

19.28. Governments, through the cooperation of relevant international organizations and industry, where appropriate, should launch a project with a view to establishing and elaborating a harmonized classification and compatible labelling system for chemicals for use in all United Nations official languages including adequate pictograms. Such a labelling system should not lead to the imposition of unjustified trade barriers. The new system should draw on current systems to the greatest extent possible; it should be developed in steps and should address the subject of compatibility with labels of various applications.

(b) Data and information

19.29. International bodies including, inter alia, IPCS (UNEP, ILO, WHO), FAO, the International Maritime Organization (IMO), the United Nations Committee of Experts on the Transport of Dangerous Goods and OECD, in cooperation with regional and national authorities having existing classification and labelling and other information-dissemination systems, should establish a coordinating group to:

a. Evaluate and, if appropriate, undertake studies of existing hazard classification and information systems to establish general principles for a globally harmonized system;

b. Develop and implement a work plan for the establishment of a globally harmonized hazard classification system. The plan should include a description of the tasks to be completed, deadline for completion and assignment of tasks to the participants in the coordinating group;

c. Elaborate a harmonized hazard classification system;

d. Draft proposals for standardization of hazard communication terminology and symbols in order to enhance risk management of chemicals and facilitate both international trade and translation of information into the end-user's language;

e. Elaborate a harmonized labelling system.

Means of implementation

(a) Financial and cost evaluation

19.30. The Conference secretariat has included the technical assistance costs related to this programme in estimates provided in programme area E. They estimate the average total annual cost (1993-2000) for strengthening international organizations to be about $3 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Human resource development

19.31. Governments and institutions and non-governmental organizations, with the collaboration of appropriate organizations and programmes of the United Nations, should launch training courses and information campaigns to facilitate the understanding and use of a new harmonized classification and compatible labelling system for chemicals.

(c) Capacity-building

19.32. In strengthening national capacities for management of chemicals, including development and implementation of, and adaptation to, new classification and labelling systems, the creation of trade barriers should be avoided and the limited capacities and resources of a large number of countries, particularly developing countries, for implementing such systems, should be taken into full account.

C. Information exchange on toxic chemicals and chemical risks

Basis for action

19.33. The following activities, related to information exchange on the benefits as well as the risks associated with the use of chemicals, are aimed at enhancing the sound management of toxic chemicals through the exchange of scientific, technical, economic and legal information.

19.34. The London Guidelines for the Exchange of Information on Chemicals in International Trade are a set of guidelines adopted by Governments with a view to increasing chemical safety through the exchange of information on chemicals. Special provisions have been included in the guidelines with regard to the exchange of information on banned and severely restricted chemicals.

19.35. The export to developing countries of chemicals that have been banned in producing countries or whose use has been severely restricted in some industrialized countries has been the subject of concern, as some importing countries lack the ability to ensure safe use, owing to inadequate infrastructure for controlling the importation, distribution, storage, formulation and disposal of chemicals.

19.36. In order to address this issue, provisions for Prior Informed Consent (PIC) procedures were introduced in 1989 in the London Guidelines (UNEP) and in the International Code of Conduct on the Distribution and Use of Pesticides (FAO). In addition a joint FAO/UNEP programme has been launched for the operation of the PIC procedures for chemicals, including the selection of chemicals to be included in the PIC procedure and preparation of PIC decision guidance documents. The ILO chemicals convention calls for communication between exporting and importing countries when hazardous chemicals have been prohibited for reasons of safety and health at work. Within the General Agreement on Tariffs and Trade (GATT) framework, negotiations have been pursued with a view to creating a binding instrument on products banned or severely restricted in the domestic market. Further, the GATT Council has agreed, as stated in its decision contained in C/M/251, to extend the mandate of the working group for a period of three months, to begin from the date of the group's next meeting, and has authorized the Chairman to hold consultations on timing with respect to convening this meeting.

19.37. Notwithstanding the importance of the PIC procedure, information exchange on all chemicals is necessary.

Objectives

19.38. The objectives of this programme area are:

a. To promote intensified exchange of information on chemical safety, use and emissions among all involved parties;

b. To achieve by the year 2000, as feasible, full participation in and implementation of the PIC procedure, including possible mandatory applications through legally binding instruments contained in the Amended London Guidelines and in the FAO International Code of Conduct, taking into account the experience gained within the PIC procedure.

Activities

(a) Management-related activities

19.39. Governments and relevant international organizations with the cooperation of industry should:

a. Strengthen national institutions responsible for information exchange on toxic chemicals and promote the creation of national centres where these centres do not exist;

b. Strengthen international institutions and networks, such as IRPTC, responsible for information exchange on toxic chemicals;

c. Establish technical cooperation with, and provide information to, other countries, especially those with shortages of technical expertise, including training in the interpretation of relevant technical data, such as Environmental Health Criteria Documents, Health and Safety Guides and International Chemical Safety Cards (published by IPCS); monographs on the Evaluation of Carcinogenic Risks of Chemicals to Humans (published by the International Agency for Research on Cancer (IARC)); and decision guidance documents (provided through the FAO/UNEP joint programme on PIC), as well as those submitted by industry and other sources;

d. Implement the PIC procedures as soon as possible and, in the light of experience gained, invite relevant international organizations, such as UNEP, GATT, FAO, WHO and others, in their respective area of competence to consider working expeditiously towards the conclusion of legally binding instruments.

(b) Data and information

19.40. Governments and relevant international organizations with the cooperation of industry should:

a. Assist in the creation of national chemical information systems in developing countries and improve access to existing international systems;

b. Improve databases and information systems on toxic chemicals, such as emission inventory programmes, through provision of training in the use of those systems as well as software, hardware and other facilities;

c. Provide knowledge and information on severely restricted or banned chemicals to importing countries to enable them to judge and take decisions on whether to import, and how to handle, those chemicals and establish joint responsibilities in trade of chemicals between importing and exporting countries;

d. Provide data necessary to assess risks to human health and the environment of possible alternatives to banned or severely restricted chemicals.

19.41. United Nations organizations should provide, as far as possible, all international information material on toxic chemicals in all United Nations official languages.

(c) International and regional cooperation and coordination

19.42. Governments and relevant international organizations with the cooperation of industry should cooperate in establishing, strengthening and expanding, as appropriate, the network of designated national authorities for exchange of information on chemicals and establish a technical exchange programme to produce a core of trained personnel within each participating country.

Means of implementation

Financing and cost evaluation

19.43. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $10 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

D. Establishment of risk reduction programmes

Basis for action

19.44. There are often alternatives to toxic chemicals currently in use. Thus, risk reduction can sometimes be achieved by using other chemicals or even non-chemical technologies. The classic example of risk reduction is the substitution of harmless or less harmful substances for harmful ones. Establishment of pollution prevention procedures and setting standards for chemicals in each environmental medium, including food and water, and in consumer goods, constitute another example of risk reduction. In a wider context, risk reduction involves broad-based approaches to reducing the risks of toxic chemicals, taking into account the entire life cycle of the chemicals. Such approaches could encompass both regulatory and non-regulatory measures, such as promotion of the use of cleaner products and technologies, pollution prevention procedures and programmes, emission inventories, product labelling, use limitations, economic incentives, procedures for safe handling and exposure regulations, and the phasing out or banning of chemicals that pose unreasonable and otherwise unmanageable risks to human health and the environment and of those that are toxic, persistent and bio-accumulative and whose use cannot be adequately controlled.

19.45. In the agricultural area, integrated pest management, including the use of biological control agents as alternatives to toxic pesticides, is one approach to risk reduction.

19.46. Other areas of risk reduction encompass the prevention of chemical accidents, prevention of poisoning by chemicals and the undertaking of toxicovigilance and coordination of clean-up and rehabilitation of areas damaged by toxic chemicals.

19.47. The OECD Council has decided that OECD member countries should establish or strengthen national risk reduction programmes. The International Council of Chemical Associations (ICCA) has introduced initiatives regarding responsible care and product stewardship aimed at reduction of chemical risks. The Awareness and Preparedness for Emergencies at Local Level (APELL) programme of UNEP is designed to assist decision makers and technical personnel in improving community awareness of hazardous installations and in preparing response plans. ILO has published a Code of Practice on the prevention of major industrial accidents and is preparing an international instrument on the prevention of industrial disasters for eventual adoption in 1993.

Objectives

19.48. The objective of the programme area is to eliminate unacceptable or unreasonable risks and, to the extent economically feasible, to reduce risks posed by toxic chemicals, by employing a broad-based approach involving a wide range of risk reduction options and by taking precautionary measures derived from a broad-based life-cycle analysis.

Activities

(a) Management-related activities

19.49. Governments, through the cooperation of relevant international organizations and industry, where appropriate, should:

a. Consider adopting policies based on accepted producer liability principles, where appropriate, as well as precautionary, anticipatory and life-cycle approaches to chemical management, covering manufacturing, trade, transport, use and disposal;

b. Undertake concerted activities to reduce risks for toxic chemicals, taking into account the entire life cycle of the chemicals. These activities could encompass both regulatory and non-regulatory measures, such as promotion of the use of cleaner products and technologies; emission inventories; product labelling; use limitations; economic incentives; and the phasing out or banning of toxic chemicals that pose an unreasonable and otherwise unmanageable risk to the environment or human health and those that are toxic, persistent and bio-accumulative and whose use cannot be adequately controlled;

c. Adopt policies and regulatory and non-regulatory measures to identify, and minimize exposure to, toxic chemicals by replacing them with less toxic substitutes and ultimately phasing out the chemicals that pose unreasonable and otherwise unmanageable risk to human health and the environment and those that are toxic, persistent and bio-accumulative and whose use cannot be adequately controlled;

d. Increase efforts to identify national needs for standard setting and implementation in the context of the FAO/WHO Codex Alimentarius in order to minimize adverse effects of chemicals in food;

e. Develop national policies and adopt the necessary regulatory framework for prevention of accidents, preparedness and response, inter alia, through land-use planning, permit systems and reporting requirements on accidents, and work with the OECD/UNEP international directory of regional response centres and the APELL programme;

f. Promote establishment and strengthening, as appropriate, of national poison control centres to ensure prompt and adequate diagnosis and treatment of poisonings;

g. Reduce overdependence on the use of agricultural chemicals through alternative farming practices, integrated pest management and other appropriate means;

h. Require manufacturers, importers and others handling toxic chemicals to develop, with the cooperation of producers of such chemicals, where applicable, emergency response procedures and preparation of on-site and off-site emergency response plans;

i. Identify, assess, reduce and minimize, or eliminate as far as feasible by environmentally sound disposal practices, risks from storage of outdated chemicals.

19.50. Industry should be encouraged to:

a. Develop an internationally agreed upon code of principles for the management of trade in chemicals, recognizing in particular the responsibility for making available information on potential risks and environmentally sound disposal practices if those chemicals become wastes, in cooperation with Governments and relevant international organizations and appropriate agencies of the United Nations system;

b. Develop application of a "responsible care" approach by producers and manufacturers towards chemical products, taking into account the total life cycle of such products;

c. Adopt, on a voluntary basis, community right-to-know programmes based on international guidelines, including sharing of information on causes of accidental and potential releases and means of preventing them, and reporting on annual routine emissions of toxic chemicals to the environment in the absence of host country requirements.

(b) Data and information

19.51. Governments, through the cooperation of relevant international organizations and industry, where appropriate, should:

a. Promote exchange of information on national and regional activities to reduce the risks of toxic chemicals;

b. Cooperate in the development of communication guidelines on chemical risks at the national level to promote information exchange with the public and the understanding of risks.

(c) International and regional cooperation and coordination

19.52. Governments, through the cooperation of relevant international organizations and industry, where appropriate, should:

a. Collaborate to develop common criteria to determine which chemicals are suitable candidates for concerted risk reduction activities;

b. Coordinate concerted risk reduction activities;

c. Develop guidelines and policies for the disclosure by manufacturers, importers and others using toxic chemicals of toxicity information declaring risks and emergency response arrangements;

d. Encourage large industrial enterprises including transnational corporations and other enterprises wherever they operate to introduce policies demonstrating the commitment, with reference to the environmentally sound management of toxic chemicals, to adopt standards of operation equivalent to or not less stringent than those existing in the country of origin;

e. Encourage and support the development and adoption by small- and medium-sized industries of relevant procedures for risk reduction in their activities;

f. Develop regulatory and non-regulatory measures and procedures aimed at preventing the export of chemicals that are banned, severely restricted, withdrawn or not approved for health or environmental reasons, except when such export has received prior written consent from the importing country or is otherwise in accordance with the PIC procedure;

g. Encourage national and regional work to harmonize evaluation of pesticides;

h. Promote and develop mechanisms for the safe production, management and use of dangerous materials, formulating programmes to substitute for them safer alternatives, where appropriate;

i. Formalize networks of emergency response centres;

j. Encourage industry, with the help of multilateral cooperation, to phase out as appropriate, and dispose of, any banned chemicals that are still in stock or in use in an environmentally sound manner, including safe reuse, where approved and appropriate.

Means of implementation

(a) Financial and cost evaluation

19.53. The Conference secretariat has included most costs related to this programme in estimates provided for programme areas A and E. They estimate other requirements for training and strengthening the emergency and poison control centres to be about $4 million annually from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

19.54. Governments, in cooperation with relevant international organizations and programmes, should:

a. Promote technology that would minimize release of, and exposure to, toxic chemicals in all countries;

b. Carry out national reviews, as appropriate, of previously accepted pesticides whose acceptance was based on criteria now recognized as insufficient or outdated and of their possible replacement with other pest control methods, particularly in the case of pesticides that are toxic, persistent and/or bio-accumulative.

E. Strengthening of national capabilities and capacities for management of chemicals

Basis for action

19.55. Many countries lack national systems to cope with chemical risks. Most countries lack scientific means of collecting evidence of misuse and of judging the impact of toxic chemicals on the environment, because of the difficulties involved in the detection of many problematic chemicals and systematically tracking their flow. Significant new uses are among the potential hazards to human health and the environment in developing countries. In several countries with systems in place there is an urgent need to make those systems more efficient.

19.56. Basic elements for sound management of chemicals are: (a) adequate legislation, (b) information gathering and dissemination, (c) capacity for risk assessment and interpretation, (d) establishment of risk management policy, (e) capacity for implementation and enforcement, (f) capacity for rehabilitation of contaminated sites and poisoned persons, (g) effective education programmes and (h) capacity to respond to emergencies.

19.57. As management of chemicals takes place within a number of sectors related to various national ministries, experience suggests that a coordinating mechanism is essential.

Objective

19.58. By the year 2000, national systems for environmentally sound management of chemicals, including legislation and provisions for implementation and enforcement, should be in place in all countries to the extent possible.

Activities

(a) Management-related activities

19.59. Governments, where appropriate and with the collaboration of relevant intergovernmental organizations, agencies and programmes of the United Nations system, should:

a. Promote and support multidisciplinary approaches to chemical safety problems;

b. Consider the need to establish and strengthen, where appropriate, a national coordinating mechanism to provide a liaison for all parties involved in chemical safety activities (for example, agriculture, environment, education, industry, labour, health, transportation, police, civil defence, economic affairs, research institutions, and poison control centres);

c. Develop institutional mechanisms for the management of chemicals, including effective means of enforcement;

d. Establish and develop or strengthen, where appropriate, networks of emergency response centres, including poison control centres;

e. Develop national and local capabilities to prepare for and respond to accidents by taking into account the UNEP APELL programme and similar programmes on accident prevention, preparedness and response, where appropriate, including regularly tested and updated emergency plans;

f. Develop, in cooperation with industry, emergency response procedures, identifying means and equipment in industries and plants necessary to reduce impacts of accidents.

(b) Data and information

19.60. Governments should:

a. Direct information campaigns such as programmes providing information about chemical stockpiles, environmentally safer alternatives and emission inventories that could also be a tool for risk reduction to the general public to increase the awareness of problems of chemical safety;

b. Establish, in conjunction with IRPTC, national registers and databases, including safety information, for chemicals;

c. Generate field monitoring data for toxic chemicals of high environmental importance;

d. Cooperate with international organizations, where appropriate, to effectively monitor and control the generation, manufacturing, distribution, transportation and disposal activities relating to toxic chemicals, to foster preventive and precautionary approaches and ensure compliance with safety management rules, and provide accurate reporting of relevant data.

(c) International and regional cooperation and coordination

19.61. Governments, with the cooperation of international organizations, where appropriate, should:

a. Prepare guidelines, where not already available, with advice and check-lists for enacting legislation in the chemical safety field;

b. Support countries, particularly developing countries, in developing and further strengthening national legislation and its implementation;

c. Consider adoption of community right-to-know or other public information-dissemination programmes, when appropriate, as possible risk reduction tools. Appropriate international organizations, in particular UNEP, OECD, the Economic Commission for Europe (ECE) and other interested parties, should consider the possibility of developing a guidance document on the establishment of such programmes for use by interested Governments. The document should build on existing work on accidents and include new guidance on toxic emission inventories and risk communication. Such guidance should include harmonization of requirements, definitions and data elements to promote uniformity and allow sharing of data internationally;

d. Build on past, present and future risk assessment work at an international level, to support countries, particularly developing countries, in developing and strengthening risk assessment capabilities at national and regional levels to minimize risk in the manufacturing and use of toxic chemicals;

e. Promote implementation of UNEP's APELL programme and, in particular, use of an OECD/UNEP international directory of emergency response centres;

f. Cooperate with all countries, particularly developing countries, in the setting up of an institutional mechanism at the national level and the development of appropriate tools for management of chemicals;

g. Arrange information courses at all levels of production and use, aimed at staff working on chemical safety issues;

h. Develop mechanisms to make maximum use in countries of internationally available information;

i. Invite UNEP to promote principles for accident prevention, preparedness and response for Governments, industry and the public, building on ILO, OECD and ECE work in this area.

Means of implementation

(a) Financing and cost evaluation

19.62. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme in developing countries to be about $600 million, including $150 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

19.63. International organizations should:

a. Promote the establishment and strengthening of national laboratories to ensure the availability of adequate national control in all countries regarding the importation, manufacture and use of chemicals;

b. Promote translation, where feasible, of internationally prepared documents on chemical safety into local languages and support various levels of regional activities related to technology transfer and information exchange.

(c) Human resource development

19.64. International organizations should:

- a. Enhance technical training for developing countries in relation to risk management of chemicals;
- b. Promote and increase support for research activities at the local level by providing grants and fellowships for studies at recognized research institutions active in disciplines of importance for chemical safety programmes.

19.65. Governments should organize, in collaboration with industry and trade unions, training programmes in the management of chemicals, including emergency response, targeted at all levels. In all countries basic elements of chemical safety principles should be included in the primary education curricula.

F. Prevention of illegal international traffic in toxic and dangerous products

19.66. There is currently no global international agreement on traffic in toxic and dangerous products (toxic and dangerous products are those that are banned, severely restricted, withdrawn or not approved for use or sale by Governments in order to protect public health and the environment). However, there is international concern that illegal international traffic in these products is detrimental to public health and the environment, particularly in developing countries, as acknowledged by the General Assembly in resolutions 42/183 and 44/226. Illegal traffic refers to traffic that is carried out in contravention of a country's laws or relevant international legal instruments. The concern also relates to transboundary movements of those products that are not carried out in accordance with applicable internationally adopted guidelines and principles. Activities under this programme area are intended to improve detection and prevention of the traffic concerned.

19.67. Further strengthening of international and regional cooperation is needed to prevent illegal transboundary movement of toxic and dangerous products. Furthermore, capacity-building at the national level is needed to improve monitoring and enforcement capabilities involving recognition of the fact that appropriate penalties may need to be imposed under an effective enforcement programme. Other activities envisaged in the present chapter (for example, under paragraph 19.39 (d)) will also contribute to achieving these objectives.

Objectives

19.68. The objectives of the programme are:

- a. To reinforce national capacities to detect and halt any illegal attempt to introduce toxic and dangerous products into the territory of any State, in contravention of national legislation and relevant international legal instruments;
- b. To assist all countries, particularly developing countries, in obtaining all appropriate information concerning illegal traffic in toxic and dangerous products.

Activities

(a) Management-related activities

19.69. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

- a. Adopt, where necessary, and implement legislation to prevent the illegal import and export of toxic and dangerous products;

b. Develop appropriate national enforcement programmes to monitor compliance with such legislation, and detect and deter violations through appropriate penalties.

(b) Data and information

19.70. Governments should develop, as appropriate, national alert systems to assist in detecting illegal traffic in toxic and dangerous products; local communities, and others could be involved in the operation of such a system.

19.71. Governments should cooperate in the exchange of information on illegal transboundary movements of toxic and dangerous products and should make such information available to appropriate United Nations bodies, such as UNEP and the regional commissions.

(c) International and regional cooperation and coordination

19.72. Further strengthening of international and regional cooperation is needed to prevent illegal transboundary movement of toxic and dangerous products.

19.73. The regional commissions, in cooperation with and relying upon expert support and advice from UNEP and other relevant bodies of the United Nations, should monitor, on the basis of data and information provided by Governments, and on a continuous basis make regional assessments of, the illegal traffic in toxic and dangerous products and its environmental, economic and health implications, in each region, drawing upon the results and experience gained in the joint UNEP/ESCAP preliminary assessment of illegal traffic, expected to be completed in August 1992.

19.74. Governments and international organizations, as appropriate, should cooperate with developing countries in strengthening their institutional and regulatory capacities in order to prevent illegal import and export of toxic and dangerous products.

G. Enhancement of international cooperation relating to several of the programme areas

19.75. A meeting of government-designated experts, held in London in December 1991, made recommendations for increased coordination among United Nations bodies and other international organizations involved in chemical risk assessment and management. That meeting called for the taking of appropriate measures to enhance the role of IPCS and establish an intergovernmental forum on chemical risk assessment and management.

19.76. To further consider the recommendations of the London meeting and initiate action on them, as appropriate, the Executive Heads of WHO, ILO and UNEP are invited to convene an intergovernmental meeting within one year, which could constitute the first meeting of the intergovernmental forum.

Agenda 21 – Chapter 20
ENVIRONMENTALLY SOUND MANAGEMENT OF HAZARDOUS WASTES, INCLUDING PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN HAZARDOUS WASTES

20.1. Effective control of the generation, storage, treatment, recycling and reuse, transport, recovery and disposal of hazardous wastes is of paramount importance for proper health, environmental protection and natural resource management, and sustainable development. This will require the active cooperation and participation of the international community, Governments and industry. Industry, as referred to in this paper, shall include large industrial enterprises, including transnational corporations and domestic industry.

20.2. Prevention of the generation of hazardous wastes and the rehabilitation of contaminated sites are the key elements, and both require knowledge, experienced people, facilities, financial resources and technical and scientific capacities.

20.3. The activities outlined in the present chapter are very closely related to, and have implications for, many of the programme areas described in other chapters, so that an overall integrated approach to hazardous waste management is necessary.

20.4. There is international concern that part of the international movement of hazardous wastes is being carried out in contravention of existing national legislation and international instruments to the detriment of the environment and public health of all countries, particularly developing countries.

20.5. In section I of resolution 44/226 of 22 December 1989, the General Assembly requested each regional commission, within existing resources, to contribute to the prevention of the illegal traffic in toxic and dangerous products and wastes by monitoring and making regional assessments of that illegal traffic and its environmental and health implications. The Assembly also requested the regional commissions to interact among themselves and cooperate with the United Nations Environment Programme (UNEP), with a view to maintaining efficient and coordinated monitoring and assessment of the illegal traffic in toxic and dangerous products and wastes.

Overall objective

20.6. Within the framework of integrated life-cycle management, the overall objective is to prevent to the extent possible, and minimize, the generation of hazardous wastes, as well as to manage those wastes in such a way that they do not cause harm to health and the environment.

Overall targets

20.7. The overall targets are:

a. Preventing or minimizing the generation of hazardous wastes as part of an overall integrated cleaner production approach; eliminating or reducing to a minimum transboundary movements of hazardous wastes, consistent with the environmentally sound and efficient management of those wastes; and ensuring that environmentally sound hazardous waste management options are pursued to the maximum extent possible within the country of origin (the self-sufficiency principle). The transboundary movements that take place should be on environmental and economic grounds and based upon agreements between the States concerned;

b. Ratification of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and the expeditious elaboration of related protocols, such as the protocol on liability and compensation, mechanisms and guidelines to facilitate the implementation of the Basel Convention;

c. Ratification and full implementation by the countries concerned of the Bamako Convention on the Ban on the Import into Africa and the Control of Transboundary Movement of Hazardous Wastes within Africa and the expeditious elaboration of a protocol on liability and compensation;

d. Elimination of the export of hazardous wastes to countries that, individually or through international agreements, prohibits the import of such wastes, such as, the contracting parties to the Bamako Convention, the fourth Lom Convention or other relevant conventions, where such prohibition is provided for.

20.8. The following programme areas are included in this chapter:

a. Promoting the prevention and minimization of hazardous waste;

b. Promoting and strengthening institutional capacities in hazardous waste management;

c. Promoting and strengthening international cooperation in the management of transboundary movements of hazardous wastes;

d. Preventing illegal international traffic in hazardous wastes.

PROGRAMME AREAS

A. Promoting the prevention and minimization of hazardous waste

Basis for action

20.9. Human health and environmental quality are undergoing continuous degradation by the increasing amount of hazardous wastes being produced. There are increasing direct and indirect costs to society and to individual citizens in connection with the generation, handling and disposal of such wastes. It is therefore crucial to enhance knowledge and information on the economics of prevention and management of hazardous wastes, including the impact in relation to the employment and environmental benefits, in order to ensure that the necessary capital investment is made available in development programmes through economic incentives. One of the first priorities in hazardous waste management is minimization, as part of a broader approach to changing industrial processes and consumer patterns through pollution prevention and cleaner production strategies.

20.10. Among the most important factors in these strategies is the recovery of hazardous wastes and their tranformation into useful material. Technology application, modification and development of new low-waste technologies are therefore currently a central focus of hazardous waste minimization.

Objectives

20.11. The objectives of this programme area are:

a. To reduce the generation of hazardous wastes, to the extent feasible, as part of an integrated cleaner production approach;

b. To optimize the use of materials by utilizing, where practicable and environmentally sound, the residues from production processes;

c. To enhance knowledge and information on the economics of prevention and management of hazardous wastes.

20.12. To achieve those objectives, and thereby reduce the impact and cost of industrial development, countries that can afford to adopt the requisite technologies without detriment to their development should establish policies that include:

a. Integration of cleaner production approaches and hazardous waste minimization in all planning, and the adoption of specific goals;

b. Promotion of the use of regulatory and market mechanisms;

c. Establishment of an intermediate goal for the stabilization of the quantity of hazardous waste generated;

d. Establishment of long-term programmes and policies including targets where appropriate for reducing the amount of hazardous waste produced per unit of manufacture;

e. Achievement of a qualitative improvement of waste streams, mainly through activities aimed at reducing their hazardous characteristics;

f. Facilitation of the establishment of cost-effective policies and approaches to hazardous waste prevention and management, taking into consideration the state of development of each country.

Activities

(a) Management-related activities

20.13. The following activities should be undertaken:

a. Governments should establish or modify standards or purchasing specifications to avoid discrimination against recycled materials, provided that those materials are environmentally sound;

b. Governments, according to their possibilities and with the help of multilateral cooperation, should provide economic or regulatory incentives, where appropriate, to stimulate industrial innovation towards cleaner production methods, to encourage industry to invest in preventive and/or recycling technologies so as to ensure environmentally sound management of all hazardous wastes, including recyclable wastes, and to encourage waste minimization investments;

c. Governments should intensify research and development activities on cost-effective alternatives for processes and substances that currently result in the generation of hazardous wastes that pose particular problems for environmentally sound disposal or treatment, the possibility of ultimate phase-out of those substances that present an unreasonable or otherwise unmanageable risk and are toxic, persistent and bio-accumulative to be considered as soon as practicable. Emphasis should be given to alternatives that could be economically accessible to developing countries;

d. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations and industries, as appropriate, should support the establishment of domestic facilities to handle hazardous wastes of domestic origin;

e. Governments of developed countries should promote the transfer of environmentally sound technologies and know-how on clean technologies and low-waste production to developing countries in conformity with chapter 34, which will bring about changes to sustain innovation. Governments should cooperate with industry to develop guidelines and codes of conduct, where appropriate, leading to cleaner production through sectoral trade industry associations;

f. Governments should encourage industry to treat, recycle, reuse and dispose of wastes at the source of generation, or as close as possible thereto, whenever hazardous waste generation is unavoidable and when it is both economically and environmentally efficient for industry to do so;

g. Governments should encourage technology assessments, for example through the use of technology assessment centres;

h. Governments should promote cleaner production through the establishment of centres providing training and information on environmentally sound technologies;

i. Industry should establish environmental management systems, including environmental auditing of its production or distribution sites, in order to identify where the installation of cleaner production methods is needed;

j. A relevant and competent United Nations organization should take the lead, in cooperation with other organizations, to develop guidelines for estimating the costs and benefits of various approaches to the adoption of cleaner production and waste minimization and environmentally sound management of hazardous wastes, including rehabilitation of contaminated sites, taking into account, where appropriate, the report of the 1991 Nairobi meeting of government-designated experts on an international strategy and an action programme, including technical guidelines for the environmentally sound management of hazardous wastes; in particular in the context of the work of the Basel Convention, being developed under the UNEP secretariat;

k. Governments should establish regulations that lay down the ultimate responsibility of industries for environmentally sound disposal of the hazardous wastes their activities generate.

(b) Data and information

20.14. The following activities should be undertaken:

a. Governments, assisted by international organizations, should establish mechanisms for assessing the value of existing information systems;

b. Governments should establish nationwide and regional information collection and dissemination clearing-houses and networks that are easy for Government institutions and industry and other non-governmental organizations to access and use;

c. International organizations, through the UNEP Cleaner Production programme and ICPIC, should extend and strengthen existing systems for collection of cleaner production information;

d. All United Nations organs and organizations should promote the use and dissemination of information collected through the Cleaner Production network;

e. OECD should, in cooperation with other organizations, undertake a comprehensive survey of, and disseminate information on, experiences of member countries in adopting economic regulatory schemes and incentive mechanisms for hazardous waste management and for the use of clean technologies that prevent such waste from being generated;

f. Governments should encourage industries to be transparent in their operations and provide relevant information to the communities that might be affected by the generation, management and disposal of hazardous wastes.

(c) International and regional cooperation and coordination

20.15. International/regional cooperation should encourage the ratification by States of the Basel and Bamako Conventions and promote the implementation of those Conventions. Regional cooperation will be necessary for the development of similar conventions in regions other than Africa, if so required. In addition there is a need for effective coordination of international regional and national policies and instruments. Another activity proposed is cooperating in monitoring the effects of the management of hazardous wastes.

Means of implementation

(a) Financing and cost evaluation

20.16. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $750 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

20.17. The following activities related to technology development and research should be undertaken:

a. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, and industries, as appropriate, should significantly increase financial support for cleaner technology research and development programmes, including the use of biotechnologies;

b. States, with the cooperation of international organizations where appropriate, should encourage industry to promote and undertake research into the phase-out of the processes that pose the greatest environmental risk based on hazardous wastes generated;

c. States should encourage industry to develop schemes to integrate the cleaner production approach into design of products and management practices;

d. States should encourage industry to exercise environmentally responsible care through hazardous waste reduction and by ensuring the environmentally sound reuse, recycling and recovery of hazardous wastes, as well as their final disposal.

(c) Human resource development

20.18. The following activities should be undertaken:

a. Governments, international organizations and industry should encourage industrial training programmes, incorporating hazardous waste prevention and minimization techniques and launching demonstration projects at the local level to develop "success stories" in cleaner production;

b. Industry should integrate cleaner production principles and case examples into training programmes and establish demonstration projects/networks by sector/country;

c. All sectors of society should develop cleaner production awareness campaigns and promote dialogue and partnership with industry and other actors.

(d) Capacity-building

20.19. The following activities should be undertaken:

a. Governments of developing countries, in cooperation with industry and with the cooperation of appropriate international organizations, should develop inventories of hazardous waste production, in order to identify their needs with respect to technology transfer and implementation of measures for the sound management of hazardous wastes and their disposal;

b. Governments should include in national planning and legislation an integrated approach to environmental protection, driven by prevention and source reduction criteria, taking into account the "polluter pays" principle, and adopt programmes for hazardous waste reduction, including targets and adequate environmental control;

c. Governments should work with industry on sector-by-sector cleaner production and hazardous waste minimization campaigns, as well as on the reduction of such wastes and other emissions;

d. Governments should take the lead in establishing and strengthening, as appropriate, national procedures for environmental impact assessment, taking into acount the cradle-to-grave approach to the management of hazardous wastes, in order to identify options for minimizing the generation of hazardous wastes, through safer handling, storage, disposal and destruction;

e. Governments, in collaboration with industry and appropriate international organizations, should develop procedures for monitoring the application of the cradle to grave approach, including environmental audits;

f. Bilateral and multilateral development assistance agencies should substantially increase funding for cleaner technology transfer to developing countries, including small- and medium-sized enterprises.

B. Promoting and strengthening institutional capacities in hazardous waste management

Basis for action

20.20. Many countries lack the national capacity to handle and manage hazardous wastes. This is primarily due to inadequate infrastructure, deficiencies in regulatory frameworks, insufficient education and training programmes and lack of coordination between the different ministries and institutions involved in various aspects of waste management. In addition, there is a lack of knowledge about environmental contamination and pollution and the associated health risk from the exposure of populations, especially women and children, and ecosystems to hazardous wastes; assessment of risks; and the characteristics of wastes. Steps need to be taken immediately to identify populations at high risk and to take remedial measures, where necessary. One of the main priorities in ensuring environmentally sound management of hazardous wastes is to provide awareness, education and training programmes covering all levels of society. There is also a need to undertake research programmes to understand the nature of hazardous wastes, to identify their potential environmental effects and to develop technologies to safely handle those wastes. Finally, there is a need to strengthen the capacities of institutions that are responsible for the management of hazardous wastes.

Objectives

20.21. The objectives in this programme area are:

a. To adopt appropriate coordinating, legislative and regulatory measures at the national level for the environmentally sound management of hazardous wastes, including the implementation of international and regional conventions;

b. To establish public awareness and information programmes on hazardous waste issues and to ensure that basic education and training programmes are provided for industry and government workers in all countries;

c. To establish comprehensive research programmes on hazardous wastes in countries;

d. To strengthen service industries to enable them to handle hazardous wastes, and to build up international networking;

e. To develop endogenous capacities in all developing countries to educate and train staff at all levels in environmentally sound hazardous waste handling and monitoring and in environmentally sound management;

f. To promote human exposure assessment with respect to hazardous waste sites and identify the remedial measures required;

g. To facilitate the assessment of impacts and risks of hazardous wastes on human health and the environment by establishing appropriate procedures, methodologies, criteria and/or effluent-related guidelines and standards;

h. To improve knowledge regarding the effects of hazardous wastes on human health and the environment;

i. To make information available to Governments and to the general public on the effects of hazardous wastes, including infectious wastes, on human health and the environment.

Activities

(a) Management-related activities

20.22. The following activities should be undertaken:

a. Governments should establish and maintain inventories, including computerized inventories, of hazardous wastes and their treatment/disposal sites, as well as of contaminated sites that require rehabilitation, and assess exposure and risk to human health and the environment; they should also identify the measures required to clean up the disposal sites. Industry should make the necessary information available;

b. Governments, industry and international organizations should collaborate in developing guidelines and easy-to-implement methods for the characterization and classification of hazardous wastes;

c. Governments should carry out exposure and health assessments of populations residing near uncontrolled hazardous waste sites and initiate remedial measures;

d. International organizations should develop improved health-based criteria, taking into account national decision-making processes, and assist in the preparation of practical technical guidelines for the prevention, minimization and safe handling and disposal of hazardous wastes;

e. Governments of developing countries should encourage interdisciplinary and intersectoral groups, in cooperation with international organizations and agencies, to implement training and research activities related to evaluation, prevention and control of hazardous waste health risks. Such groups should serve as models to develop similar regional programmes;

f. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations as appropriate, should encourage as far as possible the establishment of combined treatment/disposal facilities for hazardous wastes in small- and medium-sized industries;

g. Governments should promote identification and clean-up of sites of hazardous wastes in collaboration with industry and international organizations. Technologies, expertise and financing should be available for this purpose, as far as possible and when appropriate with the application of the "polluter pays" principle;

h. Governments should ascertain that their military establishments conform to their nationally applicable environmental norms in the treatment and disposal of hazardous wastes.

(b) Data and information

20.23. The following activities should be undertaken:

a. Governments, international and regional organizations and industry should facilitate and expand the dissemination of technical and scientific information dealing with the various health aspects of hazardous wastes, and promote its application;

b. Governments should establish notification systems and registries of exposed populations and of adverse health effects and databases on risk assessments of hazardous wastes;

c. Governments should endeavour to collect information on those who generate or dispose/recycle hazardous wastes and provide such information to the individuals and institutions concerned.

(c) International and regional cooperation and coordination

20.24. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

a. Promote and support the integration and operation, at the regional and local levels as appropriate, of institutional and interdisciplinary groups that collaborate, according to their capabilities, in activities oriented towards strengthening risk assessment, risk management and risk reduction with respect to hazardous wastes;

b. Support capacity-building and technological development and research in developing countries in connection with human resource development, with particular support to be given to consolidating networks;

c. Encourage self-sufficiency in hazardous waste disposal in the country of origin to the extent environmentally sound and feasible. The transboundary movements that take place should be on environmental and economic grounds and based upon agreements between all States concerned.

Means of implementation

(a) Financing and cost evaluation

20.25. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $18.5 billion on a global basis with about $3.5 billion related to developing countries, including about $500 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

20.26. The following activities should be undertaken:

a. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations and industry as appropriate, should increase support for hazardous waste research management in developing countries;

b. Governments, in collaboration with international organizations, should conduct research on the health effects of hazardous wastes in developing countries, including the long-term effects on children and women;

c. Governments should conduct research aimed at the needs of small and medium-sized industries;

d. Governments and international organizations in cooperation with industry should expand technological research on environmentally sound hazardous waste handling, storage, transport, treatment and disposal and on hazardous waste assessment, management and remediation;

e. International organizations should identify relevant and improved technologies for handling, storage, treatment and disposal of hazardous wastes.

(c) Human resource development

20.27. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations and industry as appropriate, should:

a. Increase public awareness and information on hazardous waste issues and promote the development and dissemination of hazardous wastes information that the general public can understand;

b. Increase participation in hazardous waste management programmes by the general public, particularly women, including participation at grass-roots levels;

c. Develop training and education programmes for men and women in industry and Government aimed at specific real-life problems, for example, planning and implementing hazardous waste minimization programmes, conducting hazardous materials audits and establishing appropriate regulatory programmes;

d. Promote the training of labour, industrial management and government regulatory staff in developing countries on technologies to minimize and manage hazardous wastes in an environmentally sound manner.

20.28. The following activities should also be undertaken:

a. Governments, according to their capacities and available resources and with the cooperation of the United Nations, other organizations and non-governmental organizations, should collaborate in developing and disseminating educational materials concerning hazardous wastes and their effects on environment and human health, for use in schools, by women's groups and by the general public;

b. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other organizations, should establish or strengthen programmes for the environmentally sound management of hazardous wastes in accordance with, as appropriate, health and environmental standards, and extend surveillance systems for the purpose of identifying adverse effects on populations and the environment of exposure to hazardous wastes;

c. International organizations should provide assistance to member States in assessing the health and environmental risks resulting from exposure to hazardous wastes, and in identifying their priorities for controlling the various categories or classes of wastes;

d. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, should promote centres of excellence for training in hazardous waste management, building on appropriate national institutions and encouraging international cooperation, inter alia, through institutional links between developed and developing countries.

(d) Capacity-building

20.29. Wherever they operate, transnational corporations and other large-scale enterprises should be encouraged to introduce policies and make commitments to adopt standards of operation with reference to hazardous waste generation and disposal that are equivalent to or no less stringent than standards in the country of origin, and Governments are invited to make efforts to establish regulations requiring environmentally sound management of hazardous wastes.

20.30. International organizations should provide assistance to member States in assessing the health and environmental risks resulting from exposure to hazardous wastes and in identifying their priorities for controlling the various categories or classes of wastes.

20.31. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations and industries, should:

a. Support national institutions in dealing with hazardous wastes from the regulatory monitoring and enforcement perspectives, with such support including enabling of those institutions to implement international conventions;

b. Develop industry-based institutions for dealing with hazardous wastes and service industries for handling hazardous wastes;

c. Adopt technical guidelines for the environmentally sound management of hazardous wastes and support the implementation of regional and international conventions;

d. Develop and expand international networking among professionals working in the area of hazardous wastes and maintain an information flow among countries;

e. Assess the feasibility of establishing and operating national, subregional and regional hazardous wastes treatment centres. Such centres could be used for education and training, as well as for facilitation and promotion of the transfer of technologies for the environmentally sound management of hazardous wastes;

f. Identify and strengthen relevant academic/research institutions or centres for excellence to enable them to carry out education and training activities in the environmentally sound management of hazardous wastes;

g. Develop a programme for the establishment of national capacities and capabilities to educate and train staff at various levels in hazardous wastes management;

h. Conduct environmental audits of existing industries to improve in-plant regimes for the management of hazardous wastes.

C. Promoting and strengthening international cooperation in the management of transboundary movements of hazardous wastes

Basis for action

20.32. In order to promote and strengthen international cooperation in the management, including control and monitoring, of transboundary movements of hazardous wastes, a precautionary approach should be applied. There is a need to harmonize the procedures and criteria used in various international and legal instruments. There is also a need to develop or harmonize existing criteria for identifying wastes dangerous to the environment and to build monitoring capacities.

Objectives

20.33. The objectives of this programme area are:

a. To facilitate and strengthen international cooperation in the environmentally sound management of hazardous wastes, including control and monitoring of transboundary movements of such wastes, including wastes for recovery, by using internationally adopted criteria to identify and classify hazardous wastes and to harmonize relevant international legal instruments;

b. To adopt a ban on or prohibit, as appropriate, the export of hazardous wastes to countries that do not have the capacity to deal with those wastes in an environmentally sound way or that have banned the import of such wastes;

c. To promote the development of control procedures for the transboundary movement of hazardous wastes destined for recovery operations under the Basel Convention that encourage environmentally and economically sound recycling options.

Activities

(a) Management-related activities

Strengthening and harmonizing criteria and regulations

20.34. Governments, according to their capacities and available resources and with the cooperation of United Nations and other relevant organizations, as appropriate, should:

a. Incorporate the notification procedure called for in the Basel Convention and relevant regional conventions, as well as in their annexes, into national legislation;

b. Formulate, where appropriate, regional agreements such as the Bamako Convention regulating the transboundary movement of hazardous wastes;

c. Help promote the compatibility and complementarity of such regional agreements with international conventions and protocols;

d. Strengthen national and regional capacities and capabilities to monitor and control the transboundary movement of hazardous wastes;

e. Promote the development of clear criteria and guidelines, within the framework of the Basel Convention and regional conventions, as appropriate, for environmentally and economically sound operation in resource recovery, recycling reclamation, direct use or alternative uses and for determination of acceptable recovery practices, including recovery levels where feasible and appropriate, with a view to preventing abuses and false presentation in the above operations;

f. Consider setting up, at national and regional levels, as appropriate, systems for monitoring and surveillance of the transboundary movements of hazardous wastes;

g. Develop guidelines for the assessment of environmentally sound treatment of hazardous wastes;

h. Develop guidelines for the identification of hazardous wastes at the national level, taking into account existing internationally - and, where appropriate, regionally - agreed criteria and prepare a list of hazard profiles for the hazardous wastes listed in national legislation;

i. Develop and use appropriate methods for testing, characterizing and classifying hazardous wastes and adopt or adapt safety standards and principles for managing hazardous wastes in an environmentally sound way.

Implementing existing agreements

20.35. Governments are urged to ratify the Basel Convention and the Bamako Convention, as applicable, and to pursue the expeditious elaboration of related protocols, such as protocols on liability and compensation, and of mechanisms and guidelines to facilitate the implementation of the Conventions.

Means of implementation

(a) Financing and cost evaluation

20.36. Because this programme area covers a relatively new field of operation and because of the lack so far of adequate studies on costing of activities under this programme, no cost estimate is available at present. However, the costs for some of the activities related to capacity-building that are presented under this programme could be considered to have been covered under the costing of programme area B above.

20.37. The interim secretariat for the Basel Convention should undertake studies in order to arrive at a reasonable cost estimate for activities to be undertaken initially until the year 2000.

(b) Capacity-building

20.38. Governments, according to their capacities and available resources and with the cooperation of United Nations and other relevant organizations, as appropriate, should:

a. Elaborate or adopt policies for the environmentally sound management of hazardous wastes, taking into account existing international instruments;

b. Make recommendations to the appropriate forums or establish or adapt norms, including the equitable implementation of the polluter pays principle, and regulatory measures to comply with obligations and principles of the Basel Convention, the Bamako Convention and other relevant existing or future agreements, including protocols, as appropriate, for setting appropriate rules and procedures in the field of liability and compensation for damage resulting from the transboundary movement and disposal of hazardous wastes;

c. Implement policies for the implementation of a ban or prohibition, as appropriate, of exports of hazardous wastes to countries that do not have the capacity to deal with those wastes in an environmentally sound way or that have banned the import of such wastes;

d. Study, in the context of the Basel Convention and relevant regional conventions, the feasibility of providing temporary financial assistance in the case of an emergency situation, in order to minimize damage from accidents arising from transboundary movements of hazardous wastes or during the disposal of those wastes.

D. Preventing illegal international traffic in hazardous wastes

Basis for action

20.39. The prevention of illegal traffic in hazardous wastes will benefit the environment and public health in all countries, particularly developing countries. It will also help to make the Basel Convention and regional international instruments, such as the Bamako Convention and the fourth Lom Convention, more effective by promoting compliance with the controls established in those agreements. Article IX of the Basel Convention specifically addresses the issue of illegal shipments of hazardous wastes. Illegal traffic of hazardous wastes may cause serious threats to human health and the environment and impose a special and abnormal burden on the countries that receive such shipments.

20.40. Effective prevention requires action through effective monitoring and the enforcement and imposition of appropriate penalties.

Objectives

20.41. The objectives of this programme area are:

  a. To reinforce national capacities to detect and halt any illegal attempt to introduce hazardous wastes into the territory of any State in contravention of national legislation and relevant international legal instruments;

  b. To assist all countries, particularly developing countries, in obtaining all appropriate information concerning illegal traffic in hazardous wastes;

  c. To cooperate, within the framework of the Basel Convention, in assisting countries that suffer the consequences of illegal traffic.

Activities

(a) Management-related activities

20.42. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

  a. Adopt, where necessary, and implement legislation to prevent the illegal import and export of hazardous wastes;

  b. Develop appropriate national enforcement programmes to monitor compliance with such legislation, detect and deter violations through appropriate penalties and give special attention to those who are known to have conducted illegal traffic in hazardous wastes and to hazardous wastes that are particularly susceptible to illegal traffic.

(b) Data and information

20.43. Governments should develop as appropriate, an information network and alert system to assist in detecting illegal traffic in hazardous wastes. Local communities and others could be involved in the operation of such a network and system.

20.44. Governments should cooperate in the exchange of information on illegal transboundary movements of hazardous wastes and should make such information available to appropriate United Nations bodies such as UNEP and the regional commissions.

(c) International and regional cooperation

20.45. The regional commissions, in cooperation with and relying upon expert support and advice from UNEP and other relevant bodies of the United Nations system, taking full account of the Basel Convention, shall continue to monitor and assess the illegal traffic in hazardous wastes, including its environmental, economic and health implications, on a continuing basis, drawing upon the results and experience gained in the joint UNEP/ESCAP preliminary assessment of illegal traffic.

20.46. Countries and international organizations, as appropriate, should cooperate to strengthen the institutional and regulatory capacities, in particular of developing countries, in order to prevent the illegal import and export of hazardous wastes.

Agenda 21 – Chapter 21
ENVIRONMENTALLY SOUND MANAGEMENT OF SOLID WASTES AND SEWAGE-RELATED ISSUES

21.1. This chapter has been incorporated in Agenda 21 in response to General Assembly resolution 44/228, section I, paragraph 3, in which the Assembly affirmed that the Conference should elaborate strategies and measures to halt and reverse the effects of environmental degradation in the context of increased national and international efforts to promote sustainable and environmentally sound development in all countries, and to section I, paragraph 12 (g), of the same resolution, in which the Assembly affirmed that environmentally sound management of wastes was among the environmental issues of major concern in maintaining the quality of the Earth's environment and especially in achieving environmentally sound and sustainable development in all countries.

21.2. Programme areas included in the present chapter of Agenda 21 are closely related to the following programme areas of other chapters of Agenda 21:

a. Protection of the quality and supply of freshwater resources: application of integrated approaches to the development, management and use of water resources (chapter 18);

b. Promoting sustainable human settlement development (chapter 7);

c. Protecting and promoting human health conditions (chapter 6);

d. Changing consumption patterns (chapter 4).

21.3. Solid wastes, as defined in this chapter, include all domestic refuse and non-hazardous wastes such as commercial and institutional wastes, street sweepings and construction debris. In some countries, the solid wastes management system also handles human wastes such as night-soil, ashes from incinerators, septic tank sludge and sludge from sewage treatment plants. If these wastes manifest hazardous characteristics they should be treated as hazardous wastes.

21.4. Environmentally sound waste management must go beyond the mere safe disposal or recovery of wastes that are generated and seek to address the root cause of the problem by attempting to change unsustainable patterns of production and consumption. This implies the application of the integrated life cycle management concept, which presents a unique opportunity to reconcile development with environmental protection.

21.5. Accordingly, the framework for requisite action should be founded on a hierarchy of objectives and focused on the four major waste-related programme areas, as follows:

a. Minimizing wastes;

b. Maximizing environmentally sound waste reuse and recycling;

c. Promoting environmentally sound waste disposal and treatment;

d. Extending waste service coverage.

21.6. The four programme areas are interrelated and mutually supportive and must therefore be integrated in order to provide a comprehensive and environmentally responsive framework for managing municipal solid wastes. The mix and emphasis given to each of the four programme areas will vary according to the local socio-economic and physical conditions, rates of waste generation and waste composition. All sectors of society should participate in all the programme areas.

PROGRAMME AREAS

A. Minimizing wastes

Basis for action

21.7. Unsustainable patterns of production and consumption are increasing the quantities and variety of environmentally persistent wastes at unprecedented rates. The trend could significantly increase the quantities of wastes produced by the end of the century and increase quantities four to fivefold by the year 2025. A preventive waste management approach focused on changes in lifestyles and in production and consumption patterns offers the best chance for reversing current trends.

Objectives

21.8. The objectives in this area are:

a. To stabilize or reduce the production of wastes destined for final disposal, over an agreed time-frame, by formulating goals based on waste weight, volume and composition and to induce separation to facilitate waste recycling and reuse;

b. To strengthen procedures for assessing waste quantity and composition changes for the purpose of formulating operational waste minimization policies utilizing economic or other instruments to induce beneficial modifications of production and consumption patterns.

21.9. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

a. By the year 2000, ensure sufficient national, regional and international capacity to access, process and monitor waste trend information and implement waste minimization policies;

b. By the year 2000, have in place in all industrialized countries programmes to stabilize or reduce, if practicable, production of wastes destined for final disposal, including per capita wastes (where this concept applies), at the level prevailing at that date; developing countries as well should work towards that goal without jeopardizing their development prospects;

c. Apply by the year 2000, in all countries, in particular in industrialized countries, programmes to reduce the production of agrochemical wastes, containers and packaging materials, which do not meet hazardous characteristics.

Activities

(a) Management-related activities

21.10. Governments should initiate programmes to achieve sustained minimization of waste generation. Non-governmental organizations and consumer groups should be encouraged to participate in such programmes, which could be drawn up with the cooperation of international organizations, where necessary. These programmes should, wherever possible, build upon existing or planned activities and should:

a. Develop and strengthen national capacities in research and design of environmentally sound technologies, as well as adopt measures to reduce wastes to a minimum;

b. Provide for incentives to reduce unsustainable patterns of production and consumption;

c. Develop, where necessary, national plans to minimize waste generation as part of overall national development plans;

d. Emphasize waste minimization considerations in procurement within the United Nations system.

(b) Data and information

21.11. Monitoring is a key prerequisite for keeping track of changes in waste quantity and quality and their resultant impact on health and the environment. Governments, with the support of international agencies, should:

a. Develop and apply methodologies for country-level waste monitoring;

b. Undertake data gathering and analysis, establish national goals and monitor progress;

c. Utilize data to assess environmental soundness of national waste policies as a basis for corrective action;

d. Input information into global information systems.

(c) International and regional cooperation and coordination

21.12. The United Nations and intergovernmental organizations, with the collaboration of Governments, should help promote waste minimization by facilitating greater exchange of information, know-how and experience. The following is a non-exhaustive list of specific activities that could be undertaken:

a. Identifying, developing and harmonizing methodologies for waste monitoring and transferring such methodologies to countries;

b. Identifying and further developing the activities of existing information networks on clean technologies and waste minimization;

c. Undertaking periodic assessment, collating and analysing country data and reporting systematically, in an appropriate United Nations forum, to the countries concerned;

d. Reviewing the effectiveness of all waste minimization instruments and identifying potential new instruments that could be used and techniques by which they could be made operational at the country level. Guidelines and codes of practice should be developed;

e. Undertaking research on the social and economic impacts of waste minimization at the consumer level.

Means of implementation

(a) Financing and cost evaluation

21.13. The Conference secretariat suggests that industrialized countries should consider investing in waste minimization the equivalent of about 1 per cent of the expenditures on solid wastes and sewage disposal. At current levels, this would amount to about $6.5 billion annually, including about $1.8 billion related to minimizing municipal solid wastes. Actual amounts would be determined by relevant municipal, provincial and national budget authorities based on local circumstances.

(b) Scientific and technological means

21.14. Waste minimization technologies and procedures will need to be identified and widely disseminated. This work should be coordinated by national Governments, with the cooperation and collaboration of non-governmental organizations, research institutions and appropriate organizations of the United Nations, and could include the following:

a. Undertaking a continuous review of the effectiveness of all waste minimization instruments and identifying potential new instruments that could be used and techniques by which instruments could be made operational at the country level. Guidelines and codes of practice should be developed;

b. Promoting waste prevention and minimization as the principal objective of national waste management programmes;

c. Promoting public education and a range of regulatory and non-regulatory incentives to encourage industry to change product design and reduce industrial process wastes through cleaner production technologies and good housekeeping practices and to encourage industries and consumers to use types of packaging that can be safely reused;

d. Executing, in accordance with national capacities, demonstration and pilot programmes to optimize waste minimization instruments;

e. Establishing procedures for adequate transport, storage, conservation and management of agricultural products, foodstuffs and other perishable goods in order to reduce the loss of those products, which results in the production of solid waste;

f. Facilitating the transfer of waste-reduction technologies to industry, particularly in developing countries, and establishing concrete national standards for effluents and solid waste, taking into account, inter alia, raw material use and energy consumption.

(c) Human resource development

21.15. Human resource development for waste minimization not only should be targeted at professionals in the waste management sector but also should seek to obtain the support of citizens and industry. Human resource development programmes must therefore aim to raise consciousness and educate and inform concerned groups and the public in general. Countries should incorporate within school curricula, where appropriate, the principles and practices of preventing and minimizing wastes and material on the environmental impacts of waste.

B. Maximizing environmentally sound waste reuse and recycling

Basis for action

21.16. The exhaustion of traditional disposal sites, stricter environmental controls governing waste disposal and increasing quantities of more persistent wastes, particularly in industrialized countries, have all contributed to a rapid increase in the cost of waste disposal services. Costs could double or triple by the end of the decade. Some current disposal practices pose a threat to the environment. As the economics of waste disposal services change, waste recycling and resource recovery are becoming increasingly cost-effective. Future waste management programmes should take maximum advantage of resource-efficient approaches to the control of wastes. These activities should be carried out in conjunction with public education programmes. It is important that markets for products from reclaimed materials be identified in the development of reuse and recycling programmes.

Objectives

21.17. The objectives in this area are:

a. To strengthen and increase national waste reuse and recycling systems;

b. To create a model internal waste reuse and recycling programme for waste streams, including paper, within the United Nations system;

c. To make available information, techniques and appropriate policy instruments to encourage and make operational waste reuse and recycling schemes.

21.18. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

a. By the year 2000, promote sufficient financial and technological capacities at the regional, national and local levels, as appropriate, to implement waste reuse and recycling policies and actions;

b. By the year 2000, in all industrialized countries, and by the year 2010, in all developing countries, have a national programme, including, to the extent possible, targets for efficient waste reuse and recycling.

Activities

(a) Management-related activities

21.19. Governments and institutions and non-governmental organizations, including consumer, women's and youth groups, in collaboration with appropriate organizations of the United Nations system, should launch programmes to demonstrate and make operational enhanced waste reuse and recycling. These programmes should, wherever possible, build upon existing or planned activities and should:

a. Develop and strengthen national capacity to reuse and recycle an increasing proportion of wastes;

b. Review and reform national waste policies to provide incentives for waste reuse and recycling;

c. Develop and implement national plans for waste management that take advantage of, and give priority to, waste reuse and recycling;

d. Modify existing standards or purchase specifications to avoid discrimination against recycled materials, taking into account the saving in energy and raw materials;

e. Develop public education and awareness programmes to promote the use of recycled products.

(b) Data and information

21.20. Information and research is required to identify promising socially acceptable and cost-effective forms of waste reuse and recycling relevant to each country. For example, supporting activities undertaken by national and local governments in collaboration with the United Nations and other international organizations could include:

a. Undertaking an extensive review of options and techniques for reuse and recycling all forms of municipal solid wastes. Policies for reuse and recycling should be made an integral component of national and local waste management programmes;

b. Assessing the extent and practice of waste reuse and recycling operations currently undertaken and identifying ways by which these could be increased and supported;

c. Increasing funding for research pilot programmes to test various options for reuse and recycling, including the use of small-scale, cottage-based recycling industries; compost production; treated waste-water irrigation; and energy recovery from wastes;

d. Producing guidelines and best practices for waste reuse and recycling;

e. Intensifying efforts, at collecting, analysing and disseminating, to key target groups, relevant information on waste issues. Special research grants could be made available on a competitive basis for innovative research projects on recycling techniques;

f. Identifying potential markets for recycled products.

(c) International and regional cooperation and coordination

21.21. States, through bilateral and multilateral cooperation, including through the United Nations and other relevant international organizations, as appropriate, should:

a. Undertake a periodic review of the extent to which countries reuse and recycle their wastes;

b. Review the effectiveness of techniques for and approaches to waste reuse and recycling and ways of enhancing their application in countries;

c. Review and update international guidelines for the safe reuse of wastes;

d. Establish appropriate programmes to support small communities' waste reuse and recycling industries in developing countries.

Means of implementation

(a) Financing and cost evaluation

21.22. The Conference secretariat has estimated that if the equivalent of 1 per cent of waste-related municipal expenditures was devoted to safe waste reuse schemes, worldwide expenditures for this purpose would amount to $8 billion. The secretariat estimates the total annual cost (1993-2000) of implementing the activities of this programme area in developing countries to be about $850 million on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific programmes proposed by international institutions and approved by their governing bodies.

(b) Scientific and technological means

21.23. The transfer of technology should support waste recycling and reuse by the following means:

a. Including the transfer of recycling technologies, such as machinery for reusing plastics, rubber and paper, within bilateral and multilateral technical cooperation and aid programmes;

b. Developing and improving existing technologies, especially indigenous technologies, and facilitating their transfer under ongoing regional and interregional technical assistance programmes;

c. Facilitating the transfer of waste reuse and recycling technology.

21.24. Incentives for waste reuse and recycling are numerous. Countries could consider the following options to encourage industry, institutions, commercial establishments and individuals to recycle wastes instead of disposing of them:

a. Offering incentives to local and municipal authorities that recycle the maximum proportion of their wastes;

b. Providing technical assistance to informal waste reuse and recycling operations;

c. Applying economic and regulatory instruments, including tax incentives, to support the principle that generators of wastes pay for their disposal;

d. Providing legal and economic conditions conducive to investments in waste reuse and recycling;

e. Implementing specific mechanisms such as deposit/refund systems as incentives for reuse and recycling;

f. Promoting the separate collection of recyclable parts of household wastes;

g. Providing incentives to improve the marketability of technically recyclable waste;

h. Encouraging the use of recyclable materials, particularly in packaging, where feasible;

i. Encouraging the development of markets for recycled goods by establishing programmes.

(c) Human resource development

21.25. Training will be required to reorient current waste management practices to include waste reuse and recycling. Governments, in collaboration with United Nations international and regional organizations, should undertake the following indicative list of actions:

a. Including waste reuse and recycling in in-service training programmes as integral components of technical cooperation programmes on urban management and infrastructure development;

b. Expanding training programmes on water supply and sanitation to incorporate techniques and policies for waste reuse and recycling;

c. Including the advantages and civic obligations associated with waste reuse and recycling in school curricula and relevant general educational courses;

d. Encouraging non-governmental organizations, community-based organizations and women's, youth and public interest group programmes, in collaboration with local municipal authorities, to mobilize community support for waste reuse and recycling through focused community-level campaigns.

(d) Capacity-building

21.26. Capacity-building to support increased waste reuse and recycling should focus on the following areas:

a. Making operational national policies and incentives for waste management;

b. Enabling local and municipal authorities to mobilize community support for waste reuse and recycling by involving and assisting informal sector waste reuse and recycling operations and undertaking waste management planning that incorporates resource recovery practices.

C. Promoting environmentally sound waste disposal and treatment

Basis for action

21.27. Even when wastes are minimized, some wastes will still remain. Even after treatment, all discharges of wastes have some residual impact on the receiving environment. Consequently, there is scope for improving waste treatment and disposal practices such as, for example, avoiding the discharge of sludges at sea. In developing countries, the problem is of a more fundamental nature: less than 10 per cent of urban wastes receive some form of treatment and only a small proportion of treatment is in compliance with any acceptable quality standard. Faecal matter treatment and disposal should be accorded due priority given the potential threat of faeces to human health.

Objectives

21.28. The objective in this area is to treat and safely dispose of a progressively increasing proportion of the generated wastes.

21.29. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

a. By the year 2000, establish waste treatment and disposal quality criteria, objectives and standards based on the nature and assimilative capacity of the receiving environment;

b. By the year 2000, establish sufficient capacity to undertake waste-related pollution impact monitoring and conduct regular surveillance, including epidemiological surveillance, where appropriate;

c. By the year 1995, in industrialized countries, and by the year 2005, in developing countries, ensure that at least 50 per cent of all sewage, waste waters and solid wastes are treated or disposed of in conformity with national or international environmental and health quality guidelines;

d. By the year 2025, dispose of all sewage, waste waters and solid wastes in conformity with national or international environmental quality guidelines.

Activities

(a) Management-related activities

21.30. Governments, institutions and non-governmental organizations, together with industries, in collaboration with appropriate organizations of the United Nations system, should launch programmes to improve the control and management of waste-related pollution. These programmes should, wherever possible, build upon existing or planned activities and should:

a. Develop and strengthen national capacity to treat and safely dispose of wastes;

b. Review and reform national waste management policies to gain control over waste-related pollution;

c. Encourage countries to seek waste disposal solutions within their sovereign territory and as close as possible to the sources of origin that are compatible with environmentally sound and efficient management. In a number of countries, transboundary movements take place to ensure that wastes are managed in an environmentally sound and efficient way. Such movements observe the relevant conventions, including those that apply to areas that are not under national jurisdiction;

d. Develop human wastes management plans, giving due attention to the development and application of appropriate technologies and the availability of resources for implementation.

(b) Data and information

21.31. Standard setting and monitoring are two key elements essential for gaining control over waste-related pollution. The following specific activities are indicative of the kind of supportive actions that could be taken by international bodies such as the United Nations Centre for Human Settlements (Habitat), the United Nations Environment Programme and the World Health Organization:

a. Assembling and analysing the scientific evidence and pollution impacts of wastes in the environment in order to formulate and disseminate recommended scientific criteria and guidelines for the environmentally sound management of solid wastes;

b. Recommending national and, where relevant, local environmental quality standards based on scientific criteria and guidelines;

c. Including within technical cooperation programmes and agreements the provision for monitoring equipment and for the requisite training in its use;

d. Establishing an information clearing-house with extensive networks at the regional, national and local levels to collect and disseminate information on all aspects of waste management, including safe disposal.

(c) International and regional cooperation and coordination

21.32. States, through bilateral and multilateral cooperation, including through the United Nations and other relevant international organizations, as appropriate, should:

a. Identify, develop and harmonize methodologies and environmental quality and health guidelines for safe waste discharge and disposal;

b. Review and keep abreast of developments and disseminate information on the effectiveness of techniques and approaches to safe waste disposal and ways of supporting their application in countries.

Means of implementation

(a) Financing and cost evaluation

21.33. Safe waste disposal programmes are relevant to both developed and developing countries. In developed countries the focus is on improving facilities to meet higher environmental quality criteria, while in developing countries considerable investment is required to build new treatment facilities.

21.34. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme in developing countries to be about $15 billion, including about $3.4 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

21.35. Scientific guidelines and research on various aspects of waste-related pollution control will be crucial for achieving the objectives of this programme. Governments, municipalities and local authorities, with appropriate international cooperation, should:

a. Prepare guidelines and technical reports on subjects such as the integration of land-use planning in human settlements with waste disposal, environmental quality criteria and standards, waste treatment and safe disposal options, industrial waste treatment and landfill operations;

b. Undertake research on critical subjects such as low-cost, low-maintenance waste-water treatment systems; safe sludge disposal options; industrial waste treatment; and low-technology, ecologically safe waste disposal options;

c. Transfer technologies, in conformity with the terms as well as the provisions of chapter 34 (Transfer of environmentally sound technology, cooperation and capacity-building), on industrial waste treatment processes through bilateral nad multilateral technical cooperation programmes and in cooperation with business and industry, including large and transnational corporations, as appropriate.

d. Focus on the rehabilitation, operation and maintenance of existing facilities and technical assistance on improved maintenance practices and techniques followed by the planning and construction of waste treatment facilities;

e. Establish programmes to maximize the source segregation and safe disposal of the hazardous components of municipal solid waste;

f. Ensure the investment and provision of waste collection facilities with the concomitant provision of water services and with an equal and parallel investment and provision of waste treatment facilities.

(c) Human resource development

21.36. Training would be required to improve current waste management practices to include safe collection and waste disposal. The following is an indicative list of actions that should be taken by Governments, in collaboration with international organizations:

a. Providing both formal and in-service training, focused on pollution control, waste treatment and disposal technologies, and operating and maintaining waste-related infrastructure. Intercountry staff exchange programmes should also be established;

b. Undertaking the requisite training for waste-related pollution monitoring and control enforcement.

(d) Capacity-building

21.37. Institutional reforms and capacity-building will be indispensable if countries are to be able to quantify and mitigate waste-related pollution. Activities to achieve this objective should include:

a. Creating and strengthening independent environmental control bodies at the national and local levels. International organizations and donors should support needed upgrading of manpower skills and provision of equipment;

b. Empowering of pollution control agencies with the requisite legal mandate and financial capacities to carry out their duties effectively.

D. Extending waste service coverage

Basis for action

21.38. By the end of the century, over 2.0 billion people will be without access to basic sanitation, and an estimated half of the urban population in developing countries will be without adequate solid waste disposal services. As many as 5.2 million people, including 4 million children under five years of age, die each year from waste-related diseases. The health impacts are particularly severe for the urban poor. The health and environmental impacts of inadequate waste management, however, go beyond the unserved settlements themselves and result in water, land and air contamination and pollution over a wider area. Extending and improving waste collection and safe disposal services are crucial to gaining control over this form of pollution.

Objectives

21.39. The overall objective of this programme is to provide health-protecting, environmentally safe waste collection and disposal services to all people. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

a. By the year 2000, have the necessary technical, financial and human resource capacity to provide waste collection services commensurate with needs;

b. By the year 2025, provide all urban populations with adequate waste services;

c. By the year 2025, ensure that full urban waste service coverage is maintained and sanitation coverage achieved in all rural areas.

Activities

(a) Management-related activities

21.40. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

a. Establish financing mechanisms for waste management service development in deprived areas, including appropriate modes of revenue generation;

b. Apply the "polluter pays" principle, where appropriate, by setting waste management charges at rates that reflect the costs of providing the service and ensure that those who generate the wastes pay the full cost of disposal in an environmentally safe way;

c. Encourage institutionalization of communities' participation in planning and implementation procedures for solid waste management.

(b) Data and information

21.41. Governments, in collaboration with the United Nations and international organizations, should undertake the following:

a. Developing and applying methodologies for waste monitoring;

b. Data gathering and analysis to establish goals and monitor progress;

c. Inputting information into a global information system building upon existing systems;

d. Strengthening the activities of existing information networks in order to disseminate focused information on the application of innovative and low-cost alternatives for waste disposal to targeted audiences.

(c) International and regional cooperation and coordination

21.42. Many United Nations and bilateral programmes exist that seek to provide water supply and sanitation services to the unserved. The Water and Sanitation Collaborative Council, a global forum, currently acts to coordinate development and encourage cooperation. Even so, given the ever-increasing numbers of unserved urban poor populations and the need to address, in addition, the problem of solid waste disposal, additional mechanisms are essential to ensure accelerated coverage of urban waste disposal services. The international community in general and selected United Nations organizations in particular should:

a. Launch a settlement infrastructure and environment programme following the United Nations Conference on Environment and Development to coordinate the activities of all organizations of the United Nations system involved in this area and include a clearing-house for information dissemination on all waste management issues;

b. Undertake and systematically report on progress in providing waste services to those without such services;

c. Review the effectiveness of techniques for and approaches to increasing coverage and identify innovative ways of accelerating the process.

Means of implementation

(a) Financing and cost evaluation

21.43. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $7.5 billion, including about $2.6 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial

terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

21.44. Governments and institutions, together with non-governmental organizations, should, in collaboration with appropriate organizations of the United Nations system, launch programmes in different parts of the developing world to extend waste services to the unserved populations. These programmes should, wherever possible, build upon and reorient existing or planned activities.

21.45. Policy changes at the national and local levels could enhance the rate of waste service coverage extension. These changes should include the following:

a. Giving full recognition to and using the full range of low-cost options for waste management, including, where appropriate, their institutionalization and incorporation within codes of practice and regulation;

b. Assigning high priority to the extension of waste management services, as necessary and appropriate, to all settlements irrespective of their legal status, giving due emphasis to meeting the waste disposal needs of the unserved, especially the unserved urban poor;

c. Integrating the provision and maintenance of waste management services with other basic services such as water-supply and storm-water drainage.

21.46. Research activities could be enhanced. Countries, in cooperation with appropriate international organizations and non-governmental organizations, should, for instance:

a. Find solutions and equipment for managing wastes in areas of concentrated populations and on small islands. In particular, there is a need for appropriate refuse storage and collection systems and cost-effective and hygienic human waste disposal options;

b. Prepare and disseminate guidelines, case-studies, policy reviews and technical reports on appropriate solutions and modes of service delivery to unserved low-income areas;

c. Launch campaigns to encourage active community participation involving women's and youth groups in the management of waste, particularly household waste;

d. Promote intercountry transfer of relevant technologies, especially technologies for high-density settlements.

(c) Human resource development

21.47. International organizations and national and local Governments, in collaboration with non-governmental organizations, should provide focused training on low-cost waste collection and disposal options, particularly techniques for their planning and delivery. Intercountry staff exchange programmes among developing countries could form part of such training. Particular attention should be given to upgrading the status and skills of management-level personnel in waste management agencies.

21.48. Improvements in management techniques are likely to yield the greatest returns in terms of improving waste management service efficiency. The United Nations, international organizations and financial institutions should, in collaboration with national and local Governments, develop and render operational management information systems for municipal record keeping and accounting and for efficiency and effectiveness assessment.

(d) Capacity-building

21.49. Governments, institutions and non-governmental organizations, with the collaboration of appropriate organizations of the United Nations system, should develop capacities to implement programmes to provide waste collection and disposal services to the unserved populations. Some activities under the programmes should include the following:

a. Establishing a special unit within current institutional arrangements to plan and deliver services to the unserved poor communities, with their involvement and participation;

b. Making revisions to existing codes and regulations to permit the use of the full range of low-cost alternative technologies for waste disposal;

c. Building institutional capacity and developing procedures for undertaking service planning and delivery.

Agenda 21 – Chapter 22
SAFE AND ENVIRONMENTALLY SOUND MANAGEMENT OF RADIOACTIVE WASTES

PROGRAMME AREA

Promoting the safe and environmentally sound management of radioactive wastes

Basis for action

22.1. Radioactive wastes are generated in the nuclear fuel cycle as well as in nuclear applications (the use of radionuclides in medicine, research and industry). The radiological and safety risk from radioactive wastes varies from very low in short-lived, low-level wastes up to very large for high-level wastes. Annually about 200,000 m3 of low-level and intermediate-level waste and 10,000 m3 of high-level waste (as well as spent nuclear fuel destined for final disposal) is generated world wide from nuclear power production. These volumes are increasing as more nuclear power units are taken into operation, nuclear facilities are decommissioned and the use of radionuclides increases. The high-level waste contains about 99 per cent of the radionuclides and thus represents the largest radiological risk. The waste volumes from nuclear applications are generally much smaller, typically some tens of cubic metres or less per year and country. However, the activity concentration, especially in sealed radiation sources, might be high, thus justifying very stringent radiological protection measures. The growth of waste volumes should continue to be kept under close review.

22.2. The safe and environmentally sound management of radioactive wastes, including their minimization, transportation and disposal, is important, given their characteristics. In most countries with a substantial nuclear power programme, technical and administrative measures have been taken to implement a waste management system. In many other countries still only in preparation for a national nuclear programme or having only nuclear applications, such systems are still needed.

Objective

22.3. The objective of this programme area is to ensure that radioactive wastes are safely managed, transported, stored and disposed of, with a view to protecting human health and the environment, within a wider framework of an interactive and integrated approach to radioactive waste management and safety.

Activities

(a) Management-related activities

22.4. States, in cooperation with relevant international organizations, where appropriate, should:

a. Promote policies and practical measures to minimize and limit, where appropriate, the generation of radioactive wastes and provide for their safe processing, conditioning, transportation and disposal;

b. Support efforts within IAEA to develop and promulgate radioactive waste safety standards or guidelines and codes of practice as an internationally accepted basis for the safe and environmentally sound management and disposal of radioactive wastes;

c. Promote safe storage, transportation and disposal of radioactive wastes, as well as spent radiation sources and spent fuel from nuclear reactors destined for final disposal, in all countries, in particular in developing countries, by facilitating the transfer of relevant technologies to those countries and/or the return to the supplier of radiation sources after their use, in accordance with relevant international regulations or guidelines;

d. Promote proper planning, including environmental impact assessment where appropriate, of safe and environmentally sound management of radioactive waste, including emergency procedures, storage, transportation and disposal, prior to and after activities that generate such waste.

(b) International and regional cooperation and coordination

22.5. States, in cooperation with relevant international organizations, where appropriate, should:

a. Strengthen their efforts to implement the Code of Practice on the Transboundary Movements of Radioactive Waste and, under the auspices of IAEA, in cooperation with relevant international organizations dealing with different modes of transport, keep the question of such movements under active review, including the desirability of concluding a legally binding instrument;

b. Encourage the London Dumping Convention to expedite work to complete studies on replacing the current voluntary moratorium on disposal of low-level radioactive wastes at sea by a ban, taking into account the precautionary approach, with a view to taking a well informed and timely decision on the issue;

c. Not promote or allow the storage or disposal of high-level, intermediate-level and low-level radioactive wastes near the marine environment unless they determine that scientific evidence, consistent with the applicable internationally agreed principles and guidelines, shows that such storage or disposal poses no unacceptable risk to people and the marine environment or does not interfere with other legitimate uses of the sea, making, in the process of consideration, appropriate use of the concept of the precautionary approach;

d. Not export radioactive wastes to countries that, individually or through international agreements, prohibit the import of such wastes, such as the contracting parties to the Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement of Hazardous Wastes within Africa, the fourth Lom Convention or other relevant conventions, where such prohibition is provided for;

e. Respect, in accordance with international law, the decisions, as far as applicable to them, taken by parties to other relevant regional environmental conventions dealing with other aspects of safe and environmentally sound management of radioactive wastes.

Means of implementation

(a) Financing and cost evaluation

22.6. The costs at the national level of managing and disposing of radioactive wastes are considerable and will vary, depending on the technology used for disposal.

22.7. The Conference secretariat has estimated the average total annual cost (1993-2000) to international organizations to implement the activities of this programme to be about $8 million. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

22.8. States, in cooperation with international organizations, where appropriate, should:

a. Promote research and development of methods for the safe and environmentally sound treatment, processing and disposal, including deep geological disposal, of high-level radioactive waste;

b. Conduct research and assessment programmes concerned with evaluating the health and environmental impact of radioactive waste disposal.

(c) Capacity-building, including human resource development

22.9. States, in cooperation with relevant international organizations, should provide, as appropriate, assistance to developing countries to establish and/or strengthen radioactive waste management infrastructures, including legislation, organizations, trained manpower and facilities for the handling, processing, storage and disposal of wastes generated from nuclear applications.

Agenda 21 – Chapter 23

STRENGTHENING THE ROLE OF MAJOR GROUPS

PREAMBLE

23.1. Critical to the effective implementation of the objectives, policies and mechanisms agreed to by Governments in all programme areas of Agenda 21 will be the commitment and genuine involvement of all social groups.

23.2. One of the fundamental prerequisites for the achievement of sustainable development is broad public participation in decision-making. Furthermore, in the more specific context of environment and development, the need for new forms of participation has emerged. This includes the need of individuals, groups and organizations to participate in environmental impact assessment procedures and to know about and participate in decisions, particularly those which potentially affect the communities in which they live and work. Individuals, groups and organizations should have access to information relevant to environment and development held by national authorities, including information on products and activities that have or are likely to have a significant impact on the environment, and information on environmental protection measures.

23.3. Any policies, definitions or rules affecting access to and participation by non-governmental organizations in the work of United Nations institutions or agencies associated with the implementation of Agenda 21 must apply equally to all major groups.

23.4. The programme areas set out below address the means for moving towards real social partnership in support of common efforts for sustainable development.

Agenda 21 – Chapter 24
GLOBAL ACTION FOR WOMEN TOWARDS SUSTAINABLE AND EQUITABLE DEVELOPMENT

PROGRAMME AREA

Basis for action

24.1. The international community has endorsed several plans of action and conventions for the full, equal and beneficial integration of women in all development activities, in particular the Nairobi Forward-looking Strategies for the Advancement of Women, 1/ which emphasize women's participation in national and international ecosystem management and control of environment degradation. Several conventions, including the Convention on the Elimination of All Forms of Discrimination against Women (General Assembly resolution 34/180, annex) and conventions of ILO and UNESCO have also been adopted to end gender-based discrimination and ensure women access to land and other resources, education and safe and equal employment. Also relevant are the 1990 World Declaration on the Survival, Protection and Development of Children and the Plan of Action for implementing the Declaration (A/45/625, annex). Effective implementation of these programmes will depend on the active involvement of women in economic and political decision-making and will be critical to the successful implementation of Agenda 21.

Objectives

24.2. The following objectives are proposed for national Governments:

a. To implement the Nairobi Forward-looking Strategies for the Advancement of Women, particularly with regard to women's participation in national ecosystem management and control of environment degradation;

b. To increase the proportion of women decision makers, planners, technical advisers, managers and extension workers in environment and development fields;

c. To consider developing and issuing by the year 2000 a strategy of changes necessary to eliminate constitutional, legal, administrative, cultural, behavioural, social and economic obstacles to women's full participation in sustainable development and in public life;

d. To establish by the year 1995 mechanisms at the national, regional and international levels to assess the implementation and impact of development and environment policies and programmes on women and to ensure their contributions and benefits;

e. To assess, review, revise and implement, where appropriate, curricula and other educational material, with a view to promoting the dissemination to both men and women of gender-relevant knowledge and valuation of women's roles through formal and non-formal education, as well as through training institutions, in collaboration with non-governmental organizations;

f. To formulate and implement clear governmental policies and national guidelines, strategies and plans for the achievement of equality in all aspects of society, including the promotion of women's literacy, education, training, nutrition and health and their participation in key decision-making positions and in management of the environment, particularly as it pertains to their access to resources, by facilitating better access to all forms of credit, particularly in the informal sector, taking measures towards ensuring women's access to property rights as well as agricultural inputs and implements;

g. To implement, as a matter of urgency, in accordance with country-specific conditions, measures to ensure that women and men have the same right to decide freely and responsibly the number and spacing of their children and have access to information, education and means, as appropriate, to enable them to exercise this right in keeping with their freedom, dignity and personally held values;

h. To consider adopting, strengthening and enforcing legislation prohibiting violence against women and to take all necessary administrative, social and educational measures to eliminate violence against women in all its forms.

Activities

24.3. Governments should take active steps to implement the following:

a. Measures to review policies and establish plans to increase the proportion of women involved as decision makers, planners, managers, scientists and technical advisers in the design, development and implementation of policies and programmes for sustainable development;

b. Measures to strengthen and empower women's bureaux, women's non-governmental organizations and women's groups in enhancing capacity-building for sustainable development;

c. Measures to eliminate illiteracy among females and to expand the enrolment of women and girls in educational institutions, to promote the goal of universal access to primary and secondary education for girl children and for women, and to increase educational and training opportunities for women and girls in sciences and technology, particularly at the post-secondary level;

d. Programmes to promote the reduction of the heavy workload of women and girl children at home and outside through the establishment of more and affordable nurseries and kindergartens by Governments, local authorities, employers and other relevant organizations and the sharing of household tasks by men and women on an equal basis, and to promote the provision of environmentally sound technologies which have been designed, developed and improved in consultation with women, accessible and clean water, an efficient fuel supply and adequate sanitation facilities;

e. Programmes to establish and strengthen preventive and curative health facilities, which include women-centred, women-managed, safe and effective reproductive health care and affordable, accessible, responsible planning of family size and services, as appropriate, in keeping with freedom, dignity and personally held values. Programmes should focus on providing comprehensive health care, including pre-natal care, education and information on health and responsible parenthood, and should provide the opportunity for all women to fully breastfeed at least during the first four months post-partum. Programmes should fully support women's productive and reproductive roles and well-being and should pay special attention to the need to provide equal and improved health care for all children and to reduce the risk of maternal and child mortality and sickness;

f. Programmes to support and strengthen equal employment opportunities and equitable remuneration for women in the formal and informal sectors with adequate economic, political and social support systems and services, including child care, particularly day-care facilities and parental leave, and equal access to credit, land and other natural resources;

g. Programmes to establish rural banking systems with a view to facilitating and increasing rural women's access to credit and to agricultural inputs and implements;

h. Programmes to develop consumer awareness and the active participation of women, emphasizing their crucial role in achieving changes necessary to reduce or eliminate unsustainable patterns of consumption and production, particularly in industrialized countries, in order to encourage investment in environmentally sound productive activities and induce environmentally and socially friendly industrial development;

i. Programmes to eliminate persistent negative images, stereotypes, attitudes and prejudices against women through changes in socialization patterns, the media, advertising, and formal and non-formal education;

j. Measures to review progress made in these areas, including the preparation of a review and appraisal report which includes recommendations to be submitted to the 1995 world conference on women.

24.4. Governments are urged to ratify all relevant conventions pertaining to women if they have not already done so. Those that have ratified conventions should enforce and establish legal, constitutional and administrative procedures to transform agreed rights into domestic legislation and should adopt measures to implement them in order to strengthen the legal capacity of women for full and equal participation in issues and decisions on sustainable development.

24.5. States parties to the Convention on the Elimination of All Forms of Discrimination against Women should review and suggest amendments to it by the year 2000, with a view to strengthening those elements of the Convention related to environment and development, giving special attention to the issue of access and entitlements to natural resources, technology, creative banking facilities and low-cost housing, and the control of pollution and toxicity in the home and workplace. States parties should also clarify the extent of the Convention's scope with respect to the issues of environment and development and request the Committee on the Elimination of Discrimination against Women to develop guidelines regarding the nature of reporting such issues, required under particular articles of the Convention.

(a) Areas requiring urgent action

24.6. Countries should take urgent measures to avert the ongoing rapid environmental and economic degradation in developing countries that generally affects the lives of women and children in rural areas suffering drought, desertification and deforestation, armed hostilities, natural disasters, toxic waste and the aftermath of the use of unsuitable agro-chemical products.

24.7. In order to reach these goals, women should be fully involved in decision-making and in the implementation of sustainable development activities.

(b) Research, data collection and dissemination of information

24.8. Countries should develop gender-sensitive databases, information systems and participatory action-oriented research and policy analyses with the collaboration of academic institutions and local women researchers on the following:

a. Knowledge and experience on the part of women of the management and conservation of natural resources for incorporation in the databases and information systems for sustainable development;

b. The impact of structural adjustment programmes on women. In research done on structural adjustment programmes, special attention should be given to the differential impact of those programmes on women, especially in terms of cut-backs in social services, education and health and in the removal of subsidies on food and fuel;

c. The impact on women of environmental degradation, particularly drought, desertification, toxic chemicals and armed hostilities;

d. Analysis of the structural linkages between gender relations, environment and development;

e. The integration of the value of unpaid work, including work that is currently designated "domestic", in resource accounting mechanisms in order better to represent the true value of the contribution of women to the economy, using revised guidelines for the United Nations System of National Accounts, to be issued in 1993;

f. Measures to develop and include environmental, social and gender impact analyses as an essential step in the development and monitoring of programmes and policies;

g. Programmes to create rural and urban training, research and resource centres in developing and developed countries that will serve to disseminate environmentally sound technologies to women.

(c) International and regional cooperation and coordination

24.9. The Secretary-General of the United Nations should review the adequacy of all United Nations institutions, including those with a special focus on the role of women, in meeting development and environment objectives, and make recommendations for strengthening their capacities. Institutions that require special attention in this area include the Division for the Advancement of Women (Centre for Social Development and Humanitarian Affairs, United Nations Office at Vienna), the United Nations Development Fund for Women (UNIFEM), the International Research and Training Institute for the Advancement of Women (INSTRAW) and the women's programmes of regional commissions. The review should consider how the environment and development programmes of each body of the United Nations system could be strengthened to implement Agenda 21 and how to incorporate the role of women in programmes and decisions related to sustainable development.

24.10. Each body of the United Nations system should review the number of women in senior policy-level and decision-making posts and, where appropriate, adopt programmes to increase that number, in accordance with Economic and Social Council resolution 1991/17 on the improvement of the status of women in the Secretariat.

24.11. UNIFEM should establish regular consultations with donors in collaboration with UNICEF, with a view to promoting operational programmes and projects on sustainable development that will strengthen the participation of women, especially low-income women, in sustainable development and in decision-making. UNDP should establish a women's focal point on development and environment in each of its resident representative offices to provide information and promote exchange of experience and information in these fields. Bodies of the United Nations system, governments and non-governmental organizations involved in the follow-up to the Conference and the implementation of Agenda 21 should ensure that gender considerations are fully integrated into all the policies, programmes and activities.

Means of implementation

Financing and cost evaluation

24.12. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this chapter to be about $40 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

Notes

1/ Report of the World Conference to Review and Appraise the Achievements of the United Nations Decade for Women: Equality, Development and Peace, Nairobi, 15-26 July 1985 (United Nations publication, Sales No. E.85.IV.10), chap. I, sect. A.

Agenda 21 – Chapter 25
CHILDREN AND YOUTH IN SUSTAINABLE DEVELOPMENT

25.1. Youth comprise nearly 30 per cent of the world's population. The involvement of today's youth in environment and development decision-making and in the implementation of programmes is critical to the long-term success of Agenda 21.

PROGRAMME AREAS

A. Advancing the role of youth and actively involving them in the protection of the environment and the promotion of economic and social development

Basis for action

25.2. It is imperative that youth from all parts of the world participate actively in all relevant levels of decision-making processes because it affects their lives today and has implications for their futures. In addition to their intellectual contribution and their ability to mobilize support, they bring unique perspectives that need to be taken into account.

25.3. Numerous actions and recommendations within the international community have been proposed to ensure that youth are provided a secure and healthy future, including an environment of quality, improved standards of living and access to education and employment. These issues need to be addressed in development planning.

Objectives

25.4. Each country should, in consultation with its youth communities, establish a process to promote dialogue between the youth community and Government at all levels and to establish mechanisms that permit youth access to information and provide them with the opportunity to present their perspectives on government decisions, including the implementation of Agenda 21.

25.5. Each country, by the year 2000, should ensure that more than 50 per cent of its youth, gender balanced, are enrolled in or have access to appropriate secondary education or equivalent educational or vocational training programmes by increasing participation and access rates on an annual basis.

25.6. Each country should undertake initiatives aimed at reducing current levels of youth unemployment, particularly where they are disproportionately high in comparison to the overall unemployment rate.

25.7. Each country and the United Nations should support the promotion and creation of mechanisms to involve youth representation in all United Nations processes in order to influence those processes.

25.8. Each country should combat human rights abuses against young people, particularly young women and girls, and should consider providing all youth with legal protection, skills, opportunities and the support necessary for them to fulfil their personal, economic and social aspirations and potentials.

Activities

25.9. Governments, according to their strategies, should take measures to:

a. Establish procedures allowing for consultation and possible participation of youth of both genders, by 1993, in decision-making processes with regard to the environment, involving youth at the local, national and regional levels;

b. Promote dialogue with youth organizations regarding the drafting and evaluation of environment plans and programmes or questions on development;

c. Consider for incorporation into relevant policies the recommendations of international, regional and local youth conferences and other forums that offer youth perspectives on social and economic development and resource management;

d. Ensure access for all youth to all types of education, wherever appropriate, providing alternative learning structures, ensure that education reflects the economic and social needs of youth and incorporates the concepts of environmental awareness and sustainable development throughout the curricula; and expand vocational training, implementing innovative methods aimed at increasing practical skills, such as environmental scouting;

e. In cooperation with relevant ministries and organizations, including representatives of youth, develop and implement strategies for creating alternative employment opportunities and provide required training to young men and women;

f. Establish task forces that include youth and youth non-governmental organizations to develop educational and awareness programmes specifically targeted to the youth population on critical issues pertaining to youth. These task forces should use formal and non-formal educational methods to reach a maximum audience. National and local media, non-governmental organizations, businesses and other organizations should assist in these task forces;

g. Give support to programmes, projects, networks, national organizations and youth non-governmental organizations to examine the integration of programmes in relation to their project requirements, encouraging the involvement of youth in project identification, design, implementation and follow-up;

h. Include youth representatives in their delegations to international meetings, in accordance with the relevant General Assembly resolutions adopted in 1968, 1977, 1985 and 1989.

25.10. The United Nations and international organizations with youth programmes should take measures to:

a. Review their youth programmes and consider how coordination between them can be enhanced;

b. Improve the dissemination of relevant information to governments, youth organizations and other non-governmental organizations on current youth positions and activities, and monitor and evaluate the application of Agenda 21;

c. Promote the United Nations Trust Fund for the International Youth Year and collaborate with youth representatives in the administration of it, focusing particularly on the needs of youth from developing countries.

Means of implementation

Financing and cost evaluation

25.11. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.5 million on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

B. Children in sustainable development

Basis for action

25.12. Children not only will inherit the responsibility of looking after the Earth, but in many developing countries they comprise nearly half the population. Furthermore, children in both developing and industrialized countries are highly vulnerable to the effects of environmental degradation. They are also highly aware supporters of environmental thinking. The specific interests of children need to be taken fully into account in the participatory process on environment and development in order to safeguard the future sustainability of any actions taken to improve the environment.

Objectives

25.13. National governments, according to their policies, should take measures to:

a. Ensure the survival, protection and development of children, in accordance with the goals endorsed by the 1990 World Summit for Children (A/45/625, annex);

b. Ensure that the interests of children are taken fully into account in the participatory process for sustainable development and environmental improvement.

Activities

25.14. Governments should take active steps to:

a. Implement programmes for children designed to reach the child-related goals of the 1990s in the areas of environment and development, especially health, nutrition, education, literacy and poverty alleviation;

b. Ratify the Convention on the Rights of the Child (General Assembly resolution 44/25 of 20 November 1989, annex), at the earliest moment and implement it by addressing the basic needs of youth and children;

c. Promote primary environmental care activities that address the basic needs of communities, improve the environment for children at the household and community level and encourage the participation and empowerment of local populations, including women, youth, children and indigenous people, towards the objective of integrated community management of resources, especially in developing countries;

d. Expand educational opportunities for children and youth, including education for environmental and developmental responsibility, with overriding attention to the education of the girl child;

e. Mobilize communities through schools and local health centres so that children and their parents become effective focal points for sensitization of communities to environmental issues;

f. Establish procedures to incorporate children's concerns into all relevant policies and strategies for environment and development at the local, regional and national levels, including those concerning allocation of and entitlement to natural resources, housing and recreation needs, and control of pollution and toxicity in both rural and urban areas.

25.15. International and regional organizations should cooperate and coordinate in the proposed areas. UNICEF should maintain cooperation and collaboration with other organizations of the United Nations, Governments and non-governmental organizations to develop programmes for children and programmes to mobilize children in the activities outlined above.

Means of implementation

(a) Financing and cost evaluation

25.16. Financing requirements for most of the activities are included in estimates for other programmes.

(b) Human resource development and capacity-building

25.17. The activities should facilitate capacity-building and training activities already contained in other chapters of Agenda 21.

Agenda 21 – Chapter 26
RECOGNIZING AND STRENGTHENING THE ROLE OF INDIGENOUS PEOPLE AND THEIR COMMUNITIES

PROGRAMME AREA

Basis for action

26.1. Indigenous people and their communities have an historical relationship with their lands and are generally descendants of the original inhabitants of such lands. In the context of this chapter the term "lands" is understood to include the environment of the areas which the people concerned traditionally occupy. Indigenous people and their communities represent a significant percentage of the global population. They have developed over many generations a holistic traditional scientific knowledge of their lands, natural resources and environment. Indigenous people and their communities shall enjoy the full measure of human rights and fundamental freedoms without hindrance or discrimination. Their ability to participate fully in sustainable development practices on their lands has tended to be limited as a result of factors of an economic, social and historical nature. In view of the interrelationship between the natural environment and its sustainable development and the cultural, social, economic and physical well-being of indigenous people, national and international efforts to implement environmentally sound and sustainable development should recognize, accommodate, promote and strengthen the role of indigenous people and their communities.

26.2. Some of the goals inherent in the objectives and activities of this programme area are already contained in such international legal instruments as the ILO Indigenous and Tribal Peoples Convention (No. 169) and are being incorporated into the draft universal declaration on indigenous rights, being prepared by the United Nations working group on indigenous populations. The International Year for the World's Indigenous People (1993), proclaimed by the General Assembly in its resolution 45/164 of 18 December 1990, presents a timely opportunity to mobilize further international technical and financial cooperation.

Objectives

26.3. In full partnership with indigenous people and their communities, Governments and, where appropriate, intergovernmental organizations should aim at fulfilling the following objectives:

a. Establishment of a process to empower indigenous people and their communities through measures that include:

    i. Adoption or strengthening of appropriate policies and/or legal instruments at the national level;

    ii. Recognition that the lands of indigenous people and their communities should be protected from activities that are environmentally unsound or that the indigenous people concerned consider to be socially and culturally inappropriate;

    iii. Recognition of their values, traditional knowledge and resource management practices with a view to promoting environmentally sound and sustainable development;

    iv. Recognition that traditional and direct dependence on renewable resources and ecosystems, including sustainable harvesting, continues to be essential to the cultural, economic and physical well-being of indigenous people and their communities;

    v. Development and strengthening of national dispute-resolution arrangements in relation to settlement of land and resource-management concerns;

vi. Support for alternative environmentally sound means of production to ensure a range of choices on how to improve their quality of life so that they effectively participate in sustainable development;

vii. Enhancement of capacity-building for indigenous communities, based on the adaptation and exchange of traditional experience, knowledge and resource-management practices, to ensure their sustainable development;

b. Establishment, where appropriate, of arrangements to strengthen the active participation of indigenous people and their communities in the national formulation of policies, laws and programmes relating to resource management and other development processes that may affect them, and their initiation of proposals for such policies and programmes;

c. Involvement of indigenous people and their communities at the national and local levels in resource management and conservation strategies and other relevant programmes established to support and review sustainable development strategies, such as those suggested in other programme areas of Agenda 21.

Activities

26.4. Some indigenous people and their communities may require, in accordance with national legislation, greater control over their lands, self-management of their resources, participation in development decisions affecting them, including, where appropriate, participation in the establishment or management of protected areas. The following are some of the specific measures which Governments could take:

a. Consider the ratification and application of existing international conventions relevant to indigenous people and their communities (where not yet done) and provide support for the adoption by the General Assembly of a declaration on indigenous rights;

b. Adopt or strengthen appropriate policies and/or legal instruments that will protect indigenous intellectual and cultural property and the right to preserve customary and administrative systems and practices.

26.5. United Nations organizations and other international development and finance organizations and Governments should, drawing on the active participation of indigenous people and their communities, as appropriate, take the following measures, inter alia, to incorporate their values, views and knowledge, including the unique contribution of indigenous women, in resource management and other policies and programmes that may affect them:

a. Appoint a special focal point within each international organization, and organize annual interorganizational coordination meetings in consultation with Governments and indigenous organizations, as appropriate, and develop a procedure within and between operational agencies for assisting Governments in ensuring the coherent and coordinated incorporation of the views of indigenous people in the design and implementation of policies and programmes. Under this procedure, indigenous people and their communities should be informed and consulted and allowed to participate in national decision-making, in particular regarding regional and international cooperative efforts. In addition, these policies and programmes should take fully into account strategies based on local indigenous initiatives;

b. Provide technical and financial assistance for capacity-building programmes to support the sustainable self-development of indigenous people and their communities;

c. Strengthen research and education programmes aimed at:

    - i. Achieving a better understanding of indigenous people's knowledge and management experience related to the environment, and applying this to contemporary development challenges;

    - ii. Increasing the efficiency of indigenous people's resource management systems, for example, by promoting the adaptation and dissemination of suitable technological innovations;

- d. Contribute to the endeavours of indigenous people and their communities in resource management and conservation strategies (such as those that may be developed under appropriate projects funded through the Global Environment Facility and the Tropical Forestry Action Plan) and other programme areas of Agenda 21, including programmes to collect, analyse and use data and other information in support of sustainable development projects.

26.6. Governments, in full partnership with indigenous people and their communities should, where appropriate:

- a. Develop or strengthen national arrangements to consult with indigenous people and their communities with a view to reflecting their needs and incorporating their values and traditional and other knowledge and practices in national policies and programmes in the field of natural resource management and conservation and other development programmes affecting them;

- b. Cooperate at the regional level, where appropriate, to address common indigenous issues with a view to recognizing and strengthening their participation in sustainable development.

Means of implementation

(a) Financing and cost evaluation

26.7. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $3 million on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Legal and administrative frameworks

26.8. Governments should incorporate, in collaboration with the indigenous people affected, the rights and responsibilities of indigenous people and their communities in the legislation of each country, suitable to the country's specific situation. Developing countries may require technical assistance to implement these activities.

(c) Human resource development

26.9. International development agencies and Governments should commit financial and other resources to education and training for indigenous people and their communities to develop their capacities to achieve their sustainable self-development, and to contribute to and participate in sustainable and equitable development at the national level. Particular attention should be given to strengthening the role of indigenous women.

Agenda 21 – Chapter 27
STRENGTHENING THE ROLE OF NON-GOVERNMENTAL ORGANIZATIONS: PARTNERS FOR SUSTAINABLE DEVELOPMENT

PROGRAMME AREA

Basis for action

27.1. Non-governmental organizations play a vital role in the shaping and implementation of participatory democracy. Their credibility lies in the responsible and constructive role they play in society. Formal and informal organizations, as well as grass-roots movements, should be recognized as partners in the implementation of Agenda 21. The nature of the independent role played by non-governmental organizations within a society calls for real participation; therefore, independence is a major attribute of non-governmental organizations and is the precondition of real participation.

27.2. One of the major challenges facing the world community as it seeks to replace unsustainable development patterns with environmentally sound and sustainable development is the need to activate a sense of common purpose on behalf of all sectors of society. The chances of forging such a sense of purpose will depend on the willingness of all sectors to participate in genuine social partnership and dialogue, while recognizing the independent roles, responsibilities and special capacities of each.

27.3. Non-governmental organizations, including those non-profit organizations representing groups addressed in the present section of Agenda 21, possess well-established and diverse experience, expertise and capacity in fields which will be of particular importance to the implementation and review of environmentally sound and socially responsible sustainable development, as envisaged throughout Agenda 21. The community of non-governmental organizations, therefore, offers a global network that should be tapped, enabled and strengthened in support of efforts to achieve these common goals.

27.4. To ensure that the full potential contribution of non-governmental organizations is realized, the fullest possible communication and cooperation between international organizations, national and local governments and non-governmental organizations should be promoted in institutions mandated, and programmes designed to carry out Agenda 21. Non-governmental organizations will also need to foster cooperation and communication among themselves to reinforce their effectiveness as actors in the implementation of sustainable development.

Objectives

27.5. Society, Governments and international bodies should develop mechanisms to allow non-governmental organizations to play their partnership role responsibly and effectively in the process of environmentally sound and sustainable development.

27.6. With a view to strengthening the role of non-governmental organizations as social partners, the United Nations system and Governments should initiate a process, in consultation with non-governmental organizations, to review formal procedures and mechanisms for the involvement of these organizations at all levels from policy-making and decision-making to implementation.

27.7. By 1995, a mutually productive dialogue should be established at the national level between all Governments and non-governmental organizations and their self-organized networks to recognize and strengthen their respective roles in implementing environmentally sound and sustainable development.

27.8. Governments and international bodies should promote and allow the participation of non-governmental organizations in the conception, establishment and evaluation of official mechanisms and formal procedures designed to review the implementation of Agenda 21 at all levels.

Activities

27.9. The United Nations system, including international finance and development agencies, and all intergovernmental organizations and forums should, in consultation with non-governmental organizations, take measures to:

a. Review and report on ways of enhancing existing procedures and mechanisms by which non-governmental organizations contribute to policy design, decision-making, implementation and evaluation at the individual agency level, in inter-agency discussions and in United Nations conferences;

b. On the basis of subparagraph (a) above, enhance existing or, where they do not exist, establish, mechanisms and procedures within each agency to draw on the expertise and views of non-governmental organizations in policy and programme design, implementation and evaluation;

c. Review levels of financial and administrative support for non-governmental organizations and the extent and effectiveness of their involvement in project and programme implementation, with a view to augmenting their role as social partners;

d. Design open and effective means of achieving the participation of non-governmental organizations in the processes established to review and evaluate the implementation of Agenda 21 at all levels;

e. Promote and allow non-governmental organizations and their self-organized networks to contribute to the review and evaluation of policies and programmes designed to implement Agenda 21, including support for developing country non-governmental organizations and their self-organized networks;

f. Take into account the findings of non-governmental review systems and evaluation processes in relevant reports of the Secretary-General to the General Assembly, and of all pertinent United Nations organizations and other intergovernmental organizations and forums concerning implementation of Agenda 21, in accordance with the review process for Agenda 21;

g. Provide access for non-governmental organizations to accurate and timely data and information to promote the effectiveness of their programmes and activities and their roles in support of sustainable development.

27.10. Governments should take measures to:

a. Establish or enhance an existing dialogue with non-governmental organizations and their self-organized networks representing various sectors, which could serve to: (i) consider the rights and responsibilities of these organizations; (ii) efficiently channel integrated non-governmental inputs to the governmental policy development process; and (iii) facilitate non-governmental coordination in implementing national policies at the programme level;

b. Encourage and enable partnership and dialogue between local non-governmental organizations and local authorities in activities aimed at sustainable development;

c. Involve non-governmental organizations in national mechanisms or procedures established to carry out Agenda 21, making the best use of their particular capacities, especially in the fields of education, poverty alleviation and environmental protection and rehabilitation;

d. Take into account the findings of non-governmental monitoring and review mechanisms in the design and evaluation of policies concerning the implementation of Agenda 21 at all levels;

e. Review government education systems to identify ways to include and expand the involvement of non-governmental organizations in the field of formal and informal education and of public awareness;

f. Make available and accessible to non-governmental organizations the data and information necessary for their effective contribution to research and to the design, implementation and evaluation of programmes.

Means of implementation

(a) Financing and cost evaluation

27.11. Depending on the outcome of review processes and the evolution of views as to how best to build partnership and dialogue between official organizations and groups of non-governmental organizations, relatively limited but unpredictable, costs will be involved at the international and national levels in enhancing consultative procedures and mechanisms. Non-governmental organizations will also require additional funding in support of their establishment of, improvement of or contributions to Agenda 21 monitoring systems. These costs will be significant but cannot be reliably estimated on the basis of existing information.

(b) Capacity-building

27.12. The organizations of the United Nations system and other intergovernmental organizations and forums, bilateral programmes and the private sector, as appropriate, will need to provide increased financial and administrative support for non-governmental organizations and their self-organized networks, in particular those based in developing countries, that contribute to the monitoring and evaluation of Agenda 21 programmes, and provide training for non-governmental organizations (and assist them to develop their own training programmes) at the international and regional levels to enhance their partnership role in programme design and implementation.

27.13. Governments will need to promulgate or strengthen, subject to country-specific conditions, any legislative measures necessary to enable the establishment by non-governmental organizations of consultative groups, and to ensure the right of non-governmental organizations to protect the public interest through legal action.

Agenda 21 – Chapter 28
LOCAL AUTHORITIES' INITIATIVES IN SUPPORT OF AGENDA 21

PROGRAMME AREA

Basis for action

28.1. Because so many of the problems and solutions being addressed by Agenda 21 have their roots in local activities, the participation and cooperation of local authorities will be a determining factor in fulfilling its objectives. Local authorities construct, operate and maintain economic, social and environmental infrastructure, oversee planning processes, establish local environmental policies and regulations, and assist in implementing national and subnational environmental policies. As the level of governance closest to the people, they play a vital role in educating, mobilizing and responding to the public to promote sustainable development.

Objectives

28.2. The following objectives are proposed for this programme area:

a. By 1996, most local authorities in each country should have undertaken a consultative process with their populations and achieved a consensus on "a local Agenda 21" for the community;

b. By 1993, the international community should have initiated a consultative process aimed at increasing cooperation between local authorities;

c. By 1994, representatives of associations of cities and other local authorities should have increased levels of cooperation and coordination with the goal of enhancing the exchange of information and experience among local authorities;

d. All local authorities in each country should be encouraged to implement and monitor programmes which aim at ensuring that women and youth are represented in decision-making, planning and implementation processes.

Activities

28.3. Each local authority should enter into a dialogue with its citizens, local organizations and private enterprises and adopt "a local Agenda 21". Through consultation and consensus-building, local authorities would learn from citizens and from local, civic, community, business and industrial organizations and acquire the information needed for formulating the best strategies. The process of consultation would increase household awareness of sustainable development issues. Local authority programmes, policies, laws and regulations to achieve Agenda 21 objectives would be assessed and modified, based on local programmes adopted. Strategies could also be used in supporting proposals for local, national, regional and international funding.

28.4. Partnerships should be fostered among relevant organs and organizations such as UNDP, the United Nations Centre for Human Settlements (Habitat) and UNEP, the World Bank, regional banks, the International Union of Local Authorities, the World Association of the Major Metropolises, Summit of Great Cities of the World, the United Towns Organization and other relevant partners, with a view to mobilizing increased international support for local authority programmes. An important goal would be to support, extend and improve existing institutions working in the field of local authority capacity-building and local environment management. For this purpose:

a. Habitat and other relevant organs and organizations of the United Nations system are called upon to strengthen services in collecting information on strategies of local authorities, in particular for those that need international support;

b. Periodic consultations involving both international partners and developing countries could review strategies and consider how such international support could best be mobilized. Such a sectoral consultation would complement concurrent country-focused consultations, such as those taking place in consultative groups and round tables.

28.5. Representatives of associations of local authorities are encouraged to establish processes to increase the exchange of information, experience and mutual technical assistance among local authorities.

Means of implementation

(a) Financing and cost evaluation

28.6. It is recommended that all parties reassess funding needs in this area. The Conference secretariat has estimated the average total annual cost (1993-2000) for strengthening international secretariat services for implementing the activities in this chapter to be about $1 million on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments.

(b) Human resource development and capacity-building

28.7. This programme should facilitate the capacity-building and training activities already contained in other chapters of Agenda 21.

Agenda 21 – Chapter 29
STRENGTHENING THE ROLE OF WORKERS AND THEIR TRADE UNIONS

PROGRAMME AREA

Basis for action

29.1. Efforts to implement sustainable development will involve adjustments and opportunities at the national and enterprise levels, with workers foremost among those concerned. As their representatives, trade unions are vital actors in facilitating the achievement of sustainable development in view of their experience in addressing industrial change, the extremely high priority they give to protection of the working environment and the related natural environment, and their promotion of socially responsible and economic development. The existing network of collaboration among trade unions and their extensive membership provide important channels through which the concepts and practices of sustainable development can be supported. The established principles of tripartism provide a basis for strengthened collaboration between workers and their representatives, Governments and employers in the implementation of sustainable development.

Objectives

29.2. The overall objective is poverty alleviation and full and sustainable employment, which contribute to safe, clean and healthy environments - the working environment, the community and the physical environment. Workers should be full participants in the implementation and evaluation of activities related to Agenda 21.

29.3. To that end the following objectives are proposed for accomplishment by the year 2000:

a. To promote ratification of relevant conventions of ILO and the enactment of legislation in support of those conventions;

b. To establish bipartite and tripartite mechanisms on safety, health and sustainable development;

c. To increase the number of environmental collective agreements aimed at achieving sustainable development;

d. To reduce occupational accidents, injuries and diseases according to recognized statistical reporting procedures;

e. To increase the provision of workers' education, training and retraining, particularly in the area of occupational health and safety and environment.

Activities

(a) Promoting freedom of association

29.4. For workers and their trade unions to play a full and informed role in support of sustainable development, Governments and employers should promote the rights of individual workers to freedom of association and the protection of the right to organize as laid down in ILO conventions. Governments should consider ratifying and implementing those conventions, if they have not already done so.

(b) Strengthening participation and consultation

29.5. Governments, business and industry should promote the active participation of workers and their trade unions in decisions on the design, implementation and evaluation of national and international policies and programmes on environment and development, including employment policies, industrial strategies, labour adjustment programmes and technology transfers.

29.6. Trade unions, employers and Governments should cooperate to ensure that the concept of sustainable development is equitably implemented.

29.7. Joint (employer/worker) or tripartite (employer/worker/Government) collaborative mechanisms at the workplace, community and national levels should be established to deal with safety, health and environment, including special reference to the rights and status of women in the workplace.

29.8. Governments and employers should ensure that workers and their representatives are provided with all relevant information to enable effective participation in these decision-making processes.

29.9. Trade unions should continue to define, develop and promote policies on all aspects of sustainable development.

29.10. Trade unions and employers should establish the framework for a joint environmental policy, and set priorities to improve the working environment and the overall environmental performance of enterprise.

29.11. Trade unions should:

a. Seek to ensure that workers are able to participate in environmental audits at the workplace and in environmental impact assessments;

b. Participate in environment and development activities within the local community and promote joint action on potential problems of common concern;

c. Play an active role in the sustainable development activities of international and regional organizations, particularly within the United Nations system.

(c) Provide adequate training

29.12. Workers and their representatives should have access to adequate training to augment environmental awareness, ensure their safety and health, and improve their economic and social welfare. Such training should ensure that the necessary skills are available to promote sustainable livelihoods and improve the working environment. Trade unions, employers, Governments and international agencies should cooperate in assessing training needs within their respective spheres of activity. Workers and their representatives should be involved in the design and implementation of worker training programmes conducted by employers and Governments.

Means of implementation

(a) Financing and cost evaluation

29.13. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $300 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Capacity-building

29.14. Particular attention should be given to strengthening the capacity of each of the tripartite social partners (Governments and employers' and workers' organizations) to facilitate greater collaboration towards sustainable development.

Agenda 21 – Chapter 30
STRENGTHENING THE ROLE OF BUSINESS AND INDUSTRY

INTRODUCTION

30.1. Business and industry, including transnational corporations, play a crucial role in the social and economic development of a country. A stable policy regime enables and encourages business and industry to operate responsibly and efficiently and to implement longer-term policies. Increasing prosperity, a major goal of the development process, is contributed primarily by the activities of business and industry. Business enterprises, large and small, formal and informal, provide major trading, employment and livelihood opportunities. Business opportunities available to women are contributing towards their professional development, strengthening their economic role and transforming social systems. Business and industry, including transnational corporations, and their representative organizations should be full participants in the implementation and evaluation of activities related to Agenda 21.

30.2. Through more efficient production processes, preventive strategies, cleaner production technologies and procedures throughout the product life cycle, hence minimizing or avoiding wastes, the policies and operations of business and industry, including transnational corporations, can play a major role in reducing impacts on resource use and the environment. Technological innovations, development, applications, transfer and the more comprehensive aspects of partnership and cooperation are to a very large extent within the province of business and industry.

30.3. Business and industry, including transnational corporations, should recognize environmental management as among the highest corporate priorities and as a key determinant to sustainable development. Some enlightened leaders of enterprises are already implementing "responsible care" and product stewardship policies and programmes, fostering openness and dialogue with employees and the public and carrying out environmental audits and assessments of compliance. These leaders in business and industry, including transnational corporations, are increasingly taking voluntary initiatives, promoting and implementing self-regulations and greater responsibilities in ensuring their activities have minimal imp acts on human health and the environment. The regulatory regimes introduced in many countries and the growing consciousness of consumers and the general public and enlightened leaders of business and industry, including transnational corporations, have all contributed to this. A positive contribution of business and industry, including transnational corporations, to sustainable development can increasingly be achieved by using economic instruments such as free market mechanisms in which the prices of goods and services should increasingly reflect the environmental costs of their input, production, use, recycling and disposal subject to country-specific conditions.

30.4. The improvement of production systems through technologies and processes that utilize resources more efficiently and at the same time produce less wastes - achieving more with less - is an important pathway towards sustainability for business and industry. Similarly, facilitating and encouraging inventiveness, competitiveness and voluntary initiatives are necessary for stimulating more varied, efficient and effective options. To address these major requirements and strengthen further the role of business and industry, including transnational corporations, the following two programmes are proposed.

PROGRAMME AREAS

A. Promoting cleaner production

Basis for action

30.5. There is increasing recognition that production, technology and management that use resources inefficiently form residues that are not reused, discharge wastes that have adverse impacts on human health and the environment and manufacture products that when used have further impacts and are difficult to recycle, need to be replaced with technologies, good engineering and management practices and know-how that would minimize waste throughout the product life cycle. The concept of cleaner production implies striving for optimal efficiencies at every stage of the product life cycle. A result would be the improvement of the overall competitiveness of the enterprise. The need for a transition towards cleaner production policies was recognized at the UNIDO-organized ministerial-level Conference on Ecologically Sustainable Industrial Development, held at Copenhagen in October 1991. 1/

Objectives

30.6. Governments, business and industry, including transnational corporations, should aim to increase the efficiency of resource utilization, including increasing the reuse and recycling of residues, and to reduce the quantity of waste discharge per unit of economic output.

Activities

30.7. Governments, business and industry, including transnational corporations, should strengthen partnerships to implement the principles and criteria for sustainable development.

30.8. Governments should identify and implement an appropriate mix of economic instruments and normative measures such as laws, legislations and standards, in consultation with business and industry, including transnational corporations, that will promote the use of cleaner production, with special consideration for small and medium-sized enterprises. Voluntary private initiatives should also be encouraged.

30.9. Governments, business and industry, including transnational corporations, academia and international organizations, should work towards the development and implementation of concepts and methodologies for the internalization of environmental costs into accounting and pricing mechanisms.

30.10. Business and industry, including transnational corporations, should be encouraged:

a. To report annually on their environmental records, as well as on their use of energy and natural resources;

b. To adopt and report on the implementation of codes of conduct promoting the best environmental practice, such as the Business Charter on Sustainable Development of the International Chamber of Commerce (ICC) and the chemical industry's responsible care initiative.

30.11. Governments should promote technological and know-how cooperation between enterprises, encompassing identification, assessment, research and development, management marketing and application of cleaner production.

30.12. Industry should incorporate cleaner production policies in its operations and investments, taking also into account its influence on suppliers and consumers.

30.13. Industry and business associations should cooperate with workers and trade unions to continuously improve the knowledge and skills for implementing sustainable development operations.

30.14. Industry and business associations should encourage individual companies to undertake programmes for improved environmental awareness and responsibility at all levels to make these enterprises dedicated to the task of improving environmental performance based on internationally accepted management practices.

30.15. International organizations should increase education, training and awareness activities relating to cleaner production, in collaboration with industry, academia and relevant national and local authorities.

30.16. International and non-governmental organizations, including trade and scientific associations, should strengthen cleaner production information dissemination by expanding existing databases, such as the UNEP International Cleaner Production Clearing House (ICPIC), the UNIDO Industrial and Technological Information Bank (INTIB) and the ICC International Environment Bureau (IEB), and should forge networking of national and international information systems.

B. Promoting responsible entrepreneurship

Basis for action

30.17. Entrepreneurship is one of the most important driving forces for innovations, increasing market efficiencies and responding to challenges and opportunities. Small and medium-sized entrepreneurs, in particular, play a very important role in the social and economic development of a country. Often, they are the major means for rural development, increasing off-farm employment and providing the transitional means for improving the livelihoods of women. Responsible entrepreneurship can play a major role in improving the efficiency of resource use, reducing risks and hazards, minimizing wastes and safeguarding environmental qualities.

Objectives

30.18. The following objectives are proposed:

a. To encourage the concept of stewardship in the management and utilization of natural resources by entrepreneurs;

b. To increase the number of entrepreneurs engaged in enterprises that subscribe to and implement sustainable development policies.

Activities

30.19. Governments should encourage the establishment and operations of sustainably managed enterprises. The mix would include regulatory measures, economic incentives and streamlining of administrative procedures to assure maximum efficiency in dealing with applications for approval in order to facilitate investment decisions, advice and assistance with information, infrastructural support and stewardship responsibilities.

30.20. Governments should encourage, in cooperation with the private sector, the establishment of venture capital funds for sustainable development projects and programmes.

30.21. In collaboration with business, industry, academia and international organizations, Governments should support training in the environmental aspects of enterprise management. Attention should also be directed towards apprenticeship schemes for youth.

30.22. Business and industry, including transnational corporations, should be encouraged to establish world-wide corporate policies on sustainable development, arrange for environmentally sound technologies to be available to affiliates owned substantially by their parent company in developing countries without extra external charges, encourage overseas affiliates to modify procedures in order to reflect local ecological conditions and share experiences with local authorities, national Governments and international organizations.

30.23. Large business and industry, including transnational corporations, should consider establishing partnership schemes with small and medium-sized enterprises to help facilitate the exchange of experience in managerial skills, market development and technological know-how, where appropriate, with the assistance of international organizations.

30.24. Business and industry should establish national councils for sustainable development and help promote entrepreneurship in the formal and informal sectors. The inclusion of women entrepreneurs should be facilitated.

30.25. Business and industry, including transnational corporations, should increase research and development of environmentally sound technologies and environmental management systems, in collaboration with academia and the scientific/engineering establishments, drawing upon indigenous knowledge, where appropriate.

30.26. Business and industry, including transnational corporations, should ensure responsible and ethical management of products and processes from the point of view of health, safety and environmental aspects. Towards this end, business and industry should increase self-regulation, guided by appropriate codes, charters and initiatives integrated into all elements of business planning and decision-making, and fostering openness and dialogue with employees and the public.

30.27. Multilateral and bilateral financial aid institutions should continue to encourage and support small- and medium-scale entrepreneurs engaged in sustainable development activities.

30.28. United Nations organizations and agencies should improve mechanisms for business and industry inputs, policy and strategy formulation processes, to ensure that environmental aspects are strengthened in foreign investment.

30.29. International organizations should increase support for research and development on improving the technological and managerial requirements for sustainable development, in particular for small and medium-sized enterprises in developing countries.

Means of implementation

Financing and cost evaluation

30.30. The activities included under this programme area are mostly changes in the orientation of existing activities and additional costs are not expected to be significant. The cost of activities by Governments and international organizations are already included in other programme areas.

Agenda 21 – Chapter 31

SCIENTIFIC AND TECHNOLOGICAL COMMUNITY

31.1. The present chapter focuses on how to enable the scientific and technological community, which includes, among others, engineers, architects, industrial designers, urban planners and other professionals and policy makers, to make a more open and effective contribution to the decision-making processes concerning environment and development. It is important that the role of science and technology in human affairs be more widely known and better understood, both by decision makers who help determine public policy and by the general public. The cooperative relationship existing between the scientific and technological community and the general public should be extended and deepened into a full partnership. Improved communication and cooperation between the scientific and technological community and decision makers will facilitate greater use of scientific and technical information and knowledge in policies and programme implementation. Decision makers should create more favourable conditions for improving training and independent research in sustainable development. Existing multidisciplinary approaches will have to be strengthened and more interdisciplinary studies developed between the scientific and technological community and policy makers and with the general public to provide leadership and practical know-how to the concept of sustainable development. The public should be assisted in communicating their sentiments to the scientific and technological community concerning how science and technology might be better managed to affect their lives in a beneficial way. By the same token, the independence of the scientific and technological community to investigate and publish without restriction and to exchange their findings freely must be assured. The adoption and implementation of ethical principles and codes of practice for the scientific and technological community that are internationally accepted could enhance professionalism and may improve and hasten recognition of the value of its contributions to environment and development, recognizing the continuing evolution and uncertainty of scientific knowledge.

PROGRAMME AREAS

A. Improving communication and cooperation among the scientific and technological community, decision makers and the public

Basis for action

31.2. The scientific and technological community and policy makers should increase their interaction in order to implement strategies for sustainable development on the basis of the best available knowledge. This implies that decision makers should provide the necessary framework for rigorous research and for full and open communication of the findings of the scientific and technological community, and develop with it ways in which research results and the concerns stemming from the findings can be communicated to decision-making bodies so as to better link scientific and technical knowledge with strategic policy and programme formulation. At the same time, this dialogue would assist the scientific and technological community in developing priorities for research and proposing actions for constructive solutions.

Objectives

31.3. The following objectives are proposed:

a. To extend and open up the decision-making process and broaden the range of developmental and environmental issues where cooperation at all levels between the scientific and technological community and decision makers can take place;

b. To improve the exchange of knowledge and concerns between the scientific and technological community and the general public in order to enable policies and programmes to be better formulated, understood and supported.

Activities

31.4. Governments should undertake the following activities:

a. Review how national scientific and technological activities could be more responsive to sustainable development needs as part of an overall effort to strengthen national research and development systems, including through strengthening and widening the membership of national scientific and technological advisory councils, organizations and committees to ensure that:

   i. The full range of national needs for scientific and technological programmes are communicated to Governments and the public;

   ii. The various strands of public opinion are represented;

b. Promote regional cooperative mechanisms to address regional needs for sustainable development. Such regional cooperative mechanisms could be facilitated through public/private partnerships and provide support to Governments, industry, non-governmental educational institutions and other domestic and international organizations, and by strengthening global professional networks;

c. Improve and expand scientific and technical inputs through appropriate mechanisms to intergovernmental consultative, cooperative and negotiating processes towards international and regional agreements;

d. Strengthen science and technology advice to the highest levels of the United Nations, and other international institutions, in order to ensure the inclusion of science and technology know-how in sustainable development policies and strategies;

e. Improve and strengthen programmes for disseminating research results of universities and research institutions. This requires recognition of and greater support to the scientists, technologists and teachers who are engaged in communicating and interpreting scientific and technological information to policy makers, professionals in other fields and the general public. Such support should focus on the transfer of skills and the transfer and adaptation of planning techniques. This requires full and open sharing of data and information among scientists and decision makers. The publication of national scientific research reports and technical reports that are understandable and relevant to local sustainable development needs would also improve the interface between science and decision-making, as well as the implementation of scientific results;

f. Improve links between the official and independent research sectors and industry so that research may become an important element of industrial strategy;

g. Promote and strengthen the role of women as full partners in the science and technology disciplines;

h. Develop and implement information technologies to enhance the dissemination of information for sustainable development.

Means of implementation

(a) Financing and cost evaluation

31.5. The Conferense secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $15 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Capacity-building

31.6. Intergovernmental panels on development and environmental issues should be organized, with emphasis on their scientific and technical aspects, and studies of responsiveness and adaptability included in subsequent programmes of action.

B. Promoting codes of practice and guidelines related to science and technology

Basis for action

31.7. Scientists and technologists have a special set of responsibilities which belong to them both as inheritors of a tradition and as professionals and members of disciplines devoted to the search for knowledge and to the need to protect the biosphere in the context of sustainable development.

31.8. Increased ethical awareness in environmental and developmental decision-making should help to place appropriate priorities for the maintenance and enhancement of life-support systems for their own sake, and in so doing ensure that the functioning of viable natural processes is properly valued by present and future societies. Therefore, a strengthening of the codes of practice and guidelines for the scientific and technological community would increase environmental awareness and contribute to sustainable development. It would build up the level of esteem and regard for the scientific and technological community and facilitate the "accountability" of science and technology.

Objectives

31.9. The objective should be to develop, improve and promote international acceptance of codes of practice and guidelines relating to science and technology in which the integrity of life-support systems is comprehensively accounted for and where the important role of science and technology in reconciling the needs of environment and development is accepted. To be effective in the decision-making process, such principles, codes of practice and guidelines must not only be agreed upon by the scientific and technological community, but also recognized by the society as a whole.

Activities

31.10. The following activities could be undertaken:

a. Strengthening national and international cooperation, including the non-governmental sector, to develop codes of practice and guidelines regarding environmentally sound and sustainable development, taking into account the Rio Declaration and existing codes of practice and guidelines;

b. Strengthening and establishing national advisory groups on environmental and developmental ethics, in order to develop a common value framework between the scientific and technological community and society as a whole, and promote continuous dialogue;

c. Extending education and training in developmental and environmental ethical issues to integrate such objectives into education curricula and research priorities;

d. Reviewing and amending relevant national and international environment and development legal instruments to ensure appropriate codes of practice and guidelines are incorporated into such regulatory machinery.

Means of implementation

(a) Financing and cost evaluation

31.11. The Conferense secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $5 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Capacity-building

31.12. Codes of practice and guidelines, including on appropriate principles, should be developed for and by the scientific and technological community in the pursuit of its research activities and implementation of programmes aimed at sustainable development.

Agenda 21 – Chapter 32
STRENGTHENING THE ROLE OF FARMERS*

PROGRAMME AREA

Basis for action

32.1. Agriculture occupies one third of the land surface of the Earth, and is the central activity for much of the world's population. Rural activities take place in close contact with nature, adding value to it by producing renewable resources, while at the same time becoming vulnerable to overexploitation and improper management.

32.2. The rural household, indigenous people and their communities, and the family farmer, a substantial number of whom are women, have been the stewards of much of the Earth's resources. Farmers must conserve their physical environment as they depend on it for their sustenance. Over the past 20 years there has been impressive increase in aggregate agricultural production. Yet, in some regions, this increase has been outstripped by population growth or international debt or falling commodity prices. Further, the natural resources that sustain farming activity need proper care, and there is a growing concern about the sustainability of agricultural production systems.

32.3. A farmer-centred approach is the key to the attainment of sustainability in both developed and developing countries and many of the programme areas in Agenda 21 address this objective. A significant number of the rural population in developing countries depend primarily upon small-scale, subsistence-oriented agriculture based on family labour. However, they have limited access to resources, technology, alternative livelihood and means of production. As a result, they are engaged in the overexploitation of natural resources, including marginal lands.

32.4. The sustainable development of people in marginal and fragile ecosystems is also addressed in Agenda 21. The key to the successful implementation of these programmes lies in the motivation and attitudes of individual farmers and government policies that would provide incentives to farmers to manage their natural resources efficiently and in a sustainable way. Farmers, particularly women, face a high degree of economic, legal and institutional uncertainties when investing in their land and other resources. The decentralization of decision-making towards local and community organizations is the key in changing people's behaviour and implementing sustainable farming strategies. This programme area deals with activities which can contribute to this end.

Objectives

32.5. The following objectives are proposed:

a. To encourage a decentralized decision-making process through the creation and strengthening of local and village organizations that would delegate power and responsibility to primary users of natural resources;

b. To support and enhance the legal capacity of women and vulnerable groups with regard to access, use and tenure of land;

c. To promote and encourage sustainable farming practices and technologies;

d. To introduce or strengthen policies that would encourage self-sufficiency in low-input and low-energy technologies, including indigenous practices, and pricing mechanisms that internalize environmental costs;

e. To develop a policy framework that provides incentives and motivation among farmers for sustainable and efficient farming practices;

f. To enhance the participation of farmers, men and women, in the design and implementation of policies directed towards these ends, through their representative organizations.

Activities

(a) Management-related activities

32.6. National Governments should:

a. Ensure the implementation of the programmes on sustainable livelihoods, agriculture and rural development, managing fragile ecosystems, water use in agriculture, and integrated management of natural resources;

b. Promote pricing mechanisms, trade policies, fiscal incentives and other policy instruments that positively affect individual farmer's decisions about an efficient and sustainable use of natural resources, and take full account of the impact of these decisions on household food security, farm incomes, employment and the environment;

c. Involve farmers and their representative organizations in the formulation of policy;

d. Protect, recognize and formalize women's access to tenure and use of land, as well as rights to land, access to credit, technology, inputs and training;

e. Support the formation of farmers' organizations by providing adequate legal and social conditions.

32.7. Support for farmers' organizations could be arranged as follows:

a. National and international research centres should cooperate with farmers' organizations in developing location-specific environment-friendly farming techniques;

b. National Governments, multilateral and bilateral development agencies and non-governmental organizations should collaborate with farmers' organizations in formulating agricultural development projects to specific agro-ecological zones.

(b) Data and information

32.8. Governments and farmers' organizations should:

a. Initiate mechanisms to document, synthesize and disseminate local knowledge, practices and project experiences so that they will make use of the lessons of the past when formulating and implementing policies affecting farming, forest and fishing populations;

b. Establish networks for the exchange of experiences with regard to farming that help to conserve land, water and forest resources, minimize the use of chemicals and reduce or reutilize farm wastes;

c. Develop pilot projects and extension services that would seek to build on the needs and knowledge base of women farmers.

(c) International and regional cooperation

32.9. FAO, IFAD, WFP, the World Bank, the regional development banks and other international organizations involved in rural development should involve farmers and their representatives in their deliberations, as appropriate.

32.10. Representative organizations of farmers should establish programmes for the development and support of farmers' organizations, particularly in developing countries.

Means of implementation

(a) Financing and cost evaluation

32.11. The financing needed for this programme area is estimated in chapter 14 (Promoting sustainable agriculture and rural development), particularly in the programme area entitled "Ensuring people's participation and promoting human resource development for sustainable agriculture". The costs shown under chapters 3 (Combating poverty), 12 (Managing fragile ecosystems: combating desertification and drought), and 13 (Managing fragile ecosystems: sustainable mountain development) are also relevant to this programme area.

(b) Scientific and technological means

32.12. Governments and appropriate international organizations, in collaboration with national research organizations and non-governmental organizations should, as appropriate:

a. Develop environmentally sound farming technologies that enhance crop yields, maintain land quality, recycle nutrients, conserve water and energy and control pests and weeds;

b. Conduct studies of high-resource and low-resource agriculture to compare their productivity and sustainability. The research should preferably be conducted under various environmental and sociological settings;

c. Support research on mechanization that would optimize human labour and animal power and hand-held and animal-drawn equipment that can be easily operated and maintained. The development of farm technologies should take into account farmers' available resources and the role of animals in farming households and the ecology.

(c) Human resource development

32.13. Governments, with the support of multilateral and bilateral development agencies and scientific organizations, should develop curricula for agricultural colleges and training institutions that would integrate ecology into agricultural science. Interdisciplinary programmes in agricultural ecology are essential to the training of a new generation of agricultural scientists and field-level extension agents.

(d) Capacity-building

32.14. Governments should, in the light of each country's specific situation:

a. Create the institutional and legal mechanisms to ensure effective land tenure to farmers. The absence of legislation indicating land rights has been an obstacle in taking action against land degradation in many farming communities in developing countries;

b. Strengthen rural institutions that would enhance sustainability through locally managed credit systems and technical assistance, local production and distribution facilities for inputs, appropriate equipment and small-scale processing units, and marketing and distribution systems;

c. Establish mechanisms to increase access of farmers, in particular women and farmers from indigenous groups, to agricultural training, credit and use of improved technology for ensuring food security.

* * * *

* In this chapter, all references to "farmers" include all rural people who derive their livelihood from activities such as farming, fishing and forest harvesting. The term "farming" also includes fishing and forest harvesting.

Agenda 21 – Chapter 33

FINANCIAL RESOURCES AND MECHANISMS

33.1. The General Assembly, in resolution 44/228 of 22 December 1989, inter alia, decided that the United Nations Conference on Environment and Development should:

> Identify ways and means of providing new and additional financial resources, particularly to developing countries, for environmentally sound development programmes and projects in accordance with national development objectives, priorities and plans and to consider ways of effectively monitoring the provision of such new and additional financial resources, particularly to developing countries, so as to enable the international community to take further appropriate action on the basis of accurate and reliable data;
>
> Identify ways and means of providing additional financial resources for measures directed towards solving major environmental problems of global concern and especially of supporting those countries, in particular developing countries, for which the implementation of such measures would entail a special or abnormal burden, owing, in particular, to their lack of financial resources, expertise or technical capacity;
>
> Consider various funding mechanisms, including voluntary ones, and examine the possibility of a special international fund and other innovative approaches, with a view to ensuring, on a favourable basis, the most effective and expeditious transfer of environmentally sound technologies to developing countries;
>
> Quantify the financial requirements for the successful implementation of Conference decisions and recommendations and identify possible sources, including innovative ones, of additional resources.

33.2. This chapter deals with the financing of the implementation of Agenda 21, which reflects a global consensus integrating environmental considerations into an accelerated development process. For each of the other chapters, the secretariat of the Conference has provided indicative estimates of the total costs of implementation for developing countries and the requirements for grant or other concessional financing needed from the international community. These reflect the need for a substantially increased effort, both by countries themselves and by the international community.

BASIS FOR ACTION

33.3. Economic growth, social development and poverty eradication are the first and overriding priorities in developing countries and are themselves essential to meeting national and global sustainability objectives. In the light of the global benefits to be realized by the implementation of Agenda 21 as a whole, the provision to developing countries of effective means, inter alia, financial resources and technology, without which it will be difficult for them to fully implement their commitments, will serve the common interests of developed and developing countries and of humankind in general, including future generations.

33.4. The cost of inaction could outweigh the financial costs of implementing Agenda 21. Inaction will narrow the choices of future generations.

33.5. For dealing with environmental issues, special efforts will be required. Global and local environmental issues are interrelated. The United Nations Framework Convention on Climate Change and the Convention on Biological Diversity address two of the most important global issues.

33.6. Economic conditions, both domestic and international, that encourage free trade and access to markets will help make economic growth and environmental protection mutually supportive for all countries, particularly for developing countries and countries undergoing the process of transition to a market economy (see chapter 2 for a fuller discussion of these issues).

33.7. International cooperation for sustainable development should also be strengthened in order to support and complement the efforts of developing countries, particularly the least developed countries.

33.8. All countries should assess how to translate Agenda 21 into national policies and programmes through a process that will integrate environment and development considerations. National and local priorities should be established by means that include public participation and community involvement, promoting equal opportunity for men and women.

33.9. For an evolving partnership among all countries of the world, including, in particular, between developed and developing countries, sustainable development strategies and enhanced and predictable levels of funding in support of longer term objectives are required. For that purpose, developing countries should articulate their own priority actions and needs for support and developed countries should commit themselves to addressing these priorities. In this respect, consultative groups and round tables and other nationally based mechanisms can play a facilitative role.

33.10. The implementation of the huge sustainable development programmes of Agenda 21 will require the provision to developing countries of substantial new and additional financial resources. Grant or concessional financing should be provided according to sound and equitable criteria and indicators. The progressive implementation of Agenda 21 should be matched by the provision of such necessary financial resources. The initial phase will be accelerated by substantial early commitments of concessional funding.

OBJECTIVES

33.11. The objectives are as follows:

a. To establish measures concerning financial resources and mechanisms for the implementation of Agenda 21;

b. To provide new and additional financial resources that are both adequate and predictable;

c. To seek full use and continuing qualitative improvement of funding mechanisms to be utilized for the implementation of Agenda 21.

ACTIVITIES

33.12. Fundamentally, the activities of this chapter are related to the implementation of all the other chapters of Agenda 21.

MEANS OF IMPLEMENTATION

33.13. In general, the financing for the implementation of Agenda 21 will come from a country's own public and private sectors. For developing countries, particularly the least developed countries, ODA is a main source of external funding, and substantial new and additional funding for sustainable development and implementation of Agenda 21 will be required. Developed countries reaffirm their commitments to reach the accepted United Nations target of 0.7 per cent of GNP for ODA and, to the extent that they have not yet achieved that target, agree to augment their aid programmes in order to reach that target as soon as possible and to ensure prompt and effective implementation of Agenda 21. Some countries have agreed to reach the target by the year 2000. It was decided that the Commission on Sustainable Development would regularly review and monitor progress towards this target. This review process should systematically combine the monitoring of the implementation of Agenda 21 with a review of the financial resources available. Those countries that have already reached the target are to be commended and encouraged to continue to contribute to the common effort to make available the substantial additional resources that have to be mobilized. Other developed countries, in line with their support for reform efforts in developing countries, agree to make their best efforts to increase their level of ODA. In this context, the importance of equitable burden-sharing among developed countries is recognized. Other countries, including those undergoing the process of transition to a market economy, may voluntarily augment the contributions of the developed countries.

33.14. Funding for Agenda 21 and other outcomes of the Conference should be provided in a way that maximizes the availability of new and additional resources and uses all available funding sources and mechanisms. These include, among others:

a. The multilateral development banks and funds:

   i. The International Development Association (IDA). Among the various issues and options that IDA deputies will examine in connection with the forthcoming tenth replenishment of IDA, the statement made by the President of the World Bank at the United Nations Conference on Environment and Development should be given special consideration in order to help the poorest countries meet their sustainable development objectives as contained in Agenda 21;

   ii. Regional and subregional development banks. The regional and subregional development banks and funds should play an increased and more effective role in providing resources on concessional or other favourable terms needed to implement Agenda 21;

   iii. The Global Environment Facility, managed jointly by the World Bank, UNDP and UNEP, whose additional grant and concessional funding is designed to achieve global environmental benefits, should cover the agreed incremental costs of relevant activities under Agenda 21, in particular for developing countries. Therefore, it should be restructured so as to, inter alia:

      Encourage universal participation;

      Have sufficient flexibility to expand its scope and coverage to relevant programme areas of Agenda 21, with global environmental benefits, as agreed;

      Ensure a governance that is transparent and democratic in nature, including in terms of decision-making and operations, by guaranteeing a balanced and equitable representation of the interests of developing countries and giving due weight to the funding efforts of donor countries;

      Ensure new and additional financial resources on grant and concessional terms, in particular to developing countries;

      Ensure predictability in the flow of funds by contributions from developed countries, taking into account the importance of equitable burden-sharing;

      Ensure access to and disbursement of the funds under mutually agreed criteria without introducing new forms of conditionality;

b. The relevant specialized agencies, other United Nations bodies and other international organizations, which have designated roles to play in supporting national Governments in implementing Agenda 21;

c. Multilateral institutions for capacity-building and technical cooperation. Necessary financial resources should be provided to UNDP to use its network of field offices and its broad mandate and experience in the field of technical cooperation for facilitating capacity-building at the country level, making full use of the expertise of the specialized agencies and other United Nations bodies within their respective areas of competence, in particular UNEP and including the multilateral and regional development banks;

d. Bilateral assistance programmes. These programmes will need to be strengthened in order to promote sustainable development;

e. Debt relief. It is important to achieve durable solutions to the debt problems of low- and middle-income developing countries in order to provide them with the needed means for sustainable development. Measures to address the continuing debt problems of low- and middle-income countries should be kept under review. All creditors in the Paris Club should promptly implement the agreement of December 1991 to provide debt relief for the poorest heavily indebted countries pursuing structural adjustment; debt relief measures should be kept under review so as to address the continuing difficulties of those countries;

f. Private funding. Voluntary contributions through non-governmental channels, which have been running at about 10 per cent of ODA, might be increased.

33.15. Investment. Mobilization of higher levels of foreign direct investment and technology transfers should be encouraged through national policies that promote investment and through joint ventures and other modalities.

33.16. Innovative financing. New ways of generating new public and private financial resources should be explored, in particular:

a. Various forms of debt relief, apart from official or Paris Club debt, including greater use of debt swaps;

b. The use of economic and fiscal incentives and mechanisms;

c. The feasibility of tradeable permits;

d. New schemes for fund-raising and voluntary contributions through private channels, including non-governmental organizations;

e. The reallocation of resources at present committed to military purposes.

33.17. A supportive international and domestic economic climate conducive to sustained economic growth and development is important, particularly for developing countries, in order to achieve sustainability.

33.18. The secretariat of the Conference has estimated the average annual costs (1993-2000) of implementing in developing countries the activities in Agenda 21 to be over $600 billion, including about $125 billion on grant or concessional terms from the international community. These are indicative and order-of-magnitude estimates only, and have not been reviewed by Governments. Actual costs will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

33.19. Developed countries and others in a position to do so should make initial financial commitments to give effect to the decisions of the Conference. They should report on such plans and commitments to the United Nations General Assembly at its forty-seventh session, in 1992.

33.20. Developing countries should also begin to draw up national plans for sustainable development to give effect to the decisions of the Conference.

33.21. Review and monitoring of the financing of Agenda 21 is essential. Questions related to the effective follow-up of the Conference are discussed in chapter 38 (International institutional arrangements). It will be important to review on a regular basis the adequacy of funding and mechanisms, including efforts to reach agreed objectives of the present chapter, including targets where applicable.

Agenda 21 – Chapter 34
TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGY, COOPERATION AND CAPACITY-BUILDING

34.1. Environmentally sound technologies protect the environment, are less polluting, use all resources in a more sustainable manner, recycle more of their wastes and products, and handle residual wastes in a more acceptable manner than the technologies for which they were substitutes.

34.2. Environmentally sound technologies in the context of pollution are "process and product technologies" that generate low or no waste, for the prevention of pollution. They also cover "end of the pipe" technologies for treatment of pollution after it has been generated.

34.3. Environmentally sound technologies are not just individual technologies, but total systems which include know-how, procedures, goods and services, and equipment as well as organizational and managerial procedures. This implies that when discussing transfer of technologies, the human resource development and local capacity-building aspects of technology choices, including gender-relevant aspects, should also be addressed. Environmentally sound technologies should be compatible with nationally determined socio-economic, cultural and environmental priorities.

34.4. There is a need for favourable access to and transfer of environmentally sound technologies, in particular to developing countries, through supportive measures that promote technology cooperation and that should enable transfer of necessary technological know-how as well as building up of economic, technical, and managerial capabilities for the efficient use and further development of transferred technology. Technology cooperation involves joint efforts by enterprises and Governments, both suppliers of technology and its recipients. Therefore, such cooperation entails an iterative process involving government, the private sector, and research and development facilities to ensure the best possible results from transfer of technology. Successful long-term partnerships in technology cooperation necessarily require continuing systematic training and capacity-building at all levels over an extended period of time.

34.5. The activities proposed in this chapter aim at improving conditions and processes on information, access to and transfer of technology (including the state-of-the-art technology and related know-how), in particular to developing countries, as well as on capacity-building and cooperative arrangements and partnerships in the field of technology, in order to promote sustainable development. New and efficient technologies will be essential to increase the capabilities, in particular of developing countries, to achieve sustainable development, sustain the world's economy, protect the environment, and alleviate poverty and human suffering. Inherent in these activities is the need to address the improvement of technology currently used and its replacement, when appropriate, with more accessible and more environmentally sound technology.

BASIS FOR ACTION

34.6. This chapter of Agenda 21 is without prejudice to specific commitments and arrangements on transfer of technology to be adopted in specific international instruments.

34.7. The availability of scientific and technological information and access to and transfer of environmentally sound technology are essential requirements for sustainable development. Providing adequate information on the environmental aspects of present technologies consists of two interrelated components: upgrading information on present and state-of-the-art technologies, including their environmental risks, and improving access to environmentally sound technologies.

34.8. The primary goal of improved access to technology information is to enable informed choices, leading to access to and transfer of such technologies and the strengthening of countries' own technological capabilities.

34.9. A large body of useful technological knowledge lies in the public domain. There is a need for the access of developing countries to such technologies as are not covered by patents or lie in the public domain. Developing countries would also need to have access to the know-how and expertise required for the effective utilization of the aforesaid technologies.

34.10. Consideration must be given to the role of patent protection and intellectual property rights along with an examination of their impact on the access to and transfer of environmentally sound technology, in particular to developing countries, as well as to further exploring efficiently the concept of assured access for developing countries to environmentally sound technology in its relation to proprietary rights with a view to developing effective responses to the needs of developing countries in this area.

34.11. Proprietary technology is available through commercial channels, and international business is an important vehicle for technology transfer. Tapping this pool of knowledge and recombining it with local innovations to generate alternative technologies should be pursued. At the same time that concepts and modalities for assured access to environmentally sound technologies, including state-of-the-art technologies, in particular by developing countries, continued to be explored, enhanced access to environmentally sound technologies should be promoted, facilitated and financed as appropriate, while providing fair incentives to innovators that promote research and development of new environmentally sound technologies.

34.12. Recipient countries require technology and strengthened support to help further develop their scientific, technological, professional and related capacities, taking into account existing technologies and capacities. This support would enable countries, in particular developing countries, to make more rational technology choices. These countries could then better assess environmentally sound technologies prior to their transfer and properly apply and manage them, as well as improve upon already existing technologies and adapt them to suit their specific development needs and priorities.

34.13. A critical mass of research and development capacity is crucial to the effective dissemination and use of environmentally sound technologies and their generation locally. Education and training programmes should reflect the needs of specific goal-oriented research activities and should work to produce specialists literate in environmentally sound technology and with an interdisciplinary outlook. Achieving this critical mass involves building the capabilities of craftspersons, technicians and middle-level managers, scientists, engineers and educators, as well as developing their corresponding social or managerial support systems. Transferring environmentally sound technologies also involves innovatively adapting and incorporating them into the local or national culture.

OBJECTIVES

34.14. The following objectives are proposed:

a. To help to ensure the access, in particular of developing countries, to scientific and technological information, including information on state-of-the-art technologies;

b. To promote, facilitate, and finance, as appropriate, the access to and the transfer of environmentally sound technologies and corresponding know-how, in particular to developing countries, on favourable terms, including on concessional and preferential terms, as mutually agreed, taking into account the need to protect intellectual property rights as well as the special needs of developing countries for the implementation of Agenda 21;

c. To facilitate the maintenance and promotion of environmentally sound indigenous technologies that may have been neglected or displaced, in particular in developing countries, paying particular attention to their priority needs and taking into account the complementary roles of men and women;

d. To support endogenous capacity-building, in particular in developing countries, so they can assess, adopt, manage and apply environmentally sound technologies. This could be achieved through inter alia:

   i. Human resource development;

   ii. Strengthening of institutional capacities for research and development and programme implementation;

   iii. Integrated sector assessments of technology needs, in accordance with countries' plans, objectives and priorities as foreseen in the implementation of Agenda 21 at the national level;

   iv. To promote long-term technological partnerships between holders of environmentally sound technologies and potential users.

ACTIVITIES

(a) Development of international information networks which link national, subregional, regional and international systems

34.15. Existing national, subregional, regional and international information systems should be developed and linked through regional clearing-houses covering broad-based sectors of the economy such as agriculture, industry and energy. Such a network might, inter alia, include national, subregional and regional patent offices that are equipped to produce reports on state-of-the-art technology. The clearing-house networks would disseminate information on available technologies, their sources, their environmental risks, and the broad terms under which they may be acquired. They would operate on an information-demand basis and focus on the information needs of the end-users. They would take into account the positive roles and contributions of international, regional and subregional organizations, business communities, trade associations, non-governmental organizations, national Governments, and newly established or strengthened national networks.

34.16. The international and regional clearing-houses would take the initiative, where necessary, in helping users to identify their needs and in disseminating information that meets those needs, including the use of existing news, public information, and communication systems. The disseminated information would highlight and detail concrete cases where environmentally sound technologies were successfully developed and implemented. In order to be effective, the clearing-houses need to provide not only information, but also referrals to other services, including sources of advice, training, technologies and technology assessment. The clearing-houses would thus facilitate the establishment of joint ventures and partnerships of various kinds.

34.17. An inventory of existing and international or regional clearing-houses or information exchange systems should be undertaken by the relevant United Nations bodies. The existing structure should be strengthened and improved when necessary. Additional information systems should be developed, if necessary, in order to fill identified gaps in this international network.

(b) Support of and promotion of access to transfer of technology

34.18. Governments and international organizations should promote, and encourage the private sector to promote, effective modalities for the access and transfer, in particular to developing countries, of environmentally sound technologies by means of activities, including the following:

a. Formulation of policies and programmes for the effective transfer of environmentally sound technologies that are publicly owned or in the public domain;

b. Creation of favourable conditions to encourage the private and public sectors to innovate, market and use environmentally sound technologies;

c. Examination by Governments and, where appropriate, by relevant organizations of existing policies, including subsidies and tax policies, and regulations to determine whether they encourage or impede the access to, transfer of and introduction of environmentally sound technologies;

d. Addressing, in a framework which fully integrates environment and development, barriers to the transfer of privately owned environmentally sound technologies and adoption of appropriate general measures to reduce such barriers while creating specific incentives, fiscal or otherwise, for the transfer of such technologies;

e. In the case of privately owned technologies, the adoption of the following measures, in particular for developing countries:

    i. Creation and enhancement by developed countries, as well as other countries which might be in a position to do so, of appropriate incentives, fiscal or otherwise, to stimulate the transfer of environmentally sound technology by companies, in particular to developing countries, as integral to sustainable development;

    ii. Enhancement of the access to and transfer of patent protected environmentally sound technologies, in particular to developing countries;

    iii. Purchase of patents and licences on commercial terms for their transfer to developing countries on non-commercial terms as part of development cooperation for sustainable development, taking into account the need to protect intellectual property rights;

    iv. In compliance with and under the specific circumstances recognized by the relevant international conventions adhered to by States, the undertaking of measures to prevent the abuse of intellectual property rights, including rules with respect to their acquisition through compulsory licensing, with the provision of equitable and adequate compensation;

    v. Provision of financial resources to acquire environmentally sound technologies in order to enable in particular developing countries to implement measures to promote sustainable development that would entail a special or abnormal burden to them;

    vi. Development of mechanisms for the access to and transfer of environmentally sound technologies, in particular to developing countries, while taking into account development in the process of negotiating an international code of conduct on transfer of technology, as decided by UNCTAD at its eighth session, held at Cartagena de Indias, Colombia, in February 1992.

f. Improvement of the capacity to develop and manage environmentally sound technologies

34.19. Frameworks at subregional, regional and international levels should be established and/or strengthened for the development, transfer and application of environmentally sound technologies and corresponding technical know-how with a special focus on developing countries' needs, by adding such functions to already existing bodies. Such frameworks would facilitate initiatives from both developing and developed countries to stimulate the research, development and transfer of environmentally sound technologies, often through partnerships within and among countries and between the scientific and technological community, industry and Governments.

34.20. National capacities to assess, develop, manage and apply new technologies should be developed. This will require strengthening existing institutions, training of personnel at all levels, and education of the end-user of the technology.

(d) Establishment of a collaborative network of research centres

34.21. A collaborative network of national, subregional, regional and international research centres on environmentally sound technology should be established to enhance the access to and development, management and transfer of environmentally sound technologies, including transfer and cooperation among developing countries and between developed and developing countries, primarily based on existing subregional or regional research, development and demonstration centres which are linked with the national institutions, in close cooperation with the private sector.

(e) Support for programmes of cooperation and assistance

34.22. Support should be provided for programmes of cooperation and assistance, including those provided by United Nations agencies, international organizations, and other appropriate public and private organizations, in particular to developing countries, in the areas of research and development, technological and human resources capacity-building in the fields of training, maintenance, national technology needs assessments, environmental impact assessments, and sustainable development planning.

34.23. Support should also be provided for national, subregional, regional, multilateral and bilateral programmes of scientific research, dissemination of information and technology development among developing countries, including through the involvement of both public and private enterprises and research facilities, as well as funding for technical cooperation among developing countries' programmes in this area. This should include developing links among these facilities to maximize their efficiency in understanding, disseminating and implementing technologies for sustainable development.

34.24. The development of global, regional and subregional programmes should include identification and evaluation of regional, subregional and national need-based priorities. Plans and studies supporting these programmes should provide the basis for potential financing by multilateral development banks, bilateral organizations, private sector interests and non-governmental organizations.

34.25. Visits should be sponsored and, on a voluntary basis, the return of qualified experts from developing countries in the field of environmentally sound technologies who are currently working in developed country institutions should be facilitated.

(f) Technology assessment in support of the management of environmentally sound technology

34.26. The international community, in particular United Nations agencies, international organizations, and other appropriate and private organizations should help exchange experiences and develop capacity for technology needs assessment, in particular in developing countries, to enable them to make choices based on environmentally sound technologies. They should:

a. Build up technology assessment capacity for the management of environmentally sound technology, including environmental impact and risk assessment, with due regard to appropriate safeguards on the transfer of technologies subject to prohibition on environmental or health grounds;

b. Strengthen the international network of regional, subregional or national environmentally sound technology assessment centres, coupled with clearing-houses, to tap the technology assessment sources mentioned above for the benefit of all nations. These centres could, in principle, provide advice and training for specific national situations and promote the building up of national capacity in environmentally sound technology assessment. The possibility of assigning this activity to already existing regional organizations should be fully explored before creating entirely new institutions, and funding of this activity through public-private partnerships should also be explored, as appropriate.

(g) Collaborative arrangements and partnerships

34.27. Long-term collaborative arrangements should be promoted between enterprises of developed and developing countries for the development of environmentally sound technologies. Multinational companies, as repositories of scarce technical skills needed for the protection and enhancement of the environment, have a special role and interest in promoting cooperation in and related to technology transfer, as they are important channels for such transfer, and for building a trained human resource pool and infrastructure.

34.28. Joint ventures should be promoted between suppliers and recipients of technologies, taking into account developing countries' policy priorities and objectives. Together with direct foreign investment, these ventures could constitute important channels of transferring environmentally sound technologies. Through such joint ventures and direct investment, sound environmental management practices could be transferred and maintained.

MEANS OF IMPLEMENTATION

Financing and cost evaluation

34.29. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this chapter to be between $450 million and $600 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

Agenda 21 – Chapter 35
SCIENCE FOR SUSTAINABLE DEVELOPMENT

35.1. This chapter focuses on the role and the use of the sciences in supporting the prudent management of the environment and development for the daily survival and future development of humanity. The programme areas proposed herein are intended to be over-arching, in order to support the specific scientific requirements identified in the other Agenda 21 chapters. One role of the sciences should be to provide information to better enable formulation and selection of environment and development policies in the decision-making process. In order to fulfil this requirement, it will be essential to enhance scientific understanding, improve long-term scientific assessments, strengthen scientific capacities in all countries and ensure that the sciences are responsive to emerging needs.

35.2. Scientists are improving their understanding in areas such as climatic change, growth in rates of resource consumption, demographic trends, and environmental degradation. Changes in those and other areas need to be taken into account in working out long-term strategies for development. A first step towards improving the scientific basis for these strategies is a better understanding of land, oceans, atmosphere and their interlocking water, nutrient and biogeochemical cycles and energy flows which all form part of the Earth system. This is essential if a more accurate estimate is to be provided of the carrying capacity of the planet Earth and of its resilience under the many stresses placed upon it by human activities. The sciences can provide this understanding through increased research into the underlying ecological processes and through the application of modern, effective and efficient tools that are now available, such as remote-sensing devices, robotic monitoring instruments and computing and modelling capabilities. The sciences are playing an important role in linking the fundamental significance of the Earth system as life support to appropriate strategies for development which build on its continued functioning. The sciences should continue to play an increasing role in providing for an improvement in the efficiency of resource utilization and in finding new development practices, resources, and alternatives. There is a need for the sciences constantly to reassess and promote less intensive trends in resource utilization, including less intensive utilization of energy in industry, agriculture, and transportation. Thus, the sciences are increasingly being understood as an essential component in the search for feasible pathways towards sustainable development.

35.3. Scientific knowledge should be applied to articulate and support the goals of sustainable development, through scientific assessments of current conditions and future prospects for the Earth system. Such assessments, based on existing and emerging innovations within the sciences, should be used in the decision-making process and in the interactive processes between the sciences and policy-making. There needs to be an increased output from the sciences in order to enhance understanding and facilitate interaction between science and society. An increase in the scientific capacity and capability to achieve these goals will also be required, particularly in developing countries. Of crucial importance is the need for scientists in developing countries to participate fully in international scientific research programmes dealing with the global problems of environment and development so as to allow all countries to participate on equal footing in negotiations on global environmental and developmental issues. In the face of threats of irreversible environmental damage, lack of full scientific understanding should not be an excuse for postponing actions which are justified in their own right. The precautionary approach could provide a basis for policies relating to complex systems that are not yet fully understood and whose consequences of disturbances cannot yet be predicted.

35.4. The programme areas, which are in harmony with the conclusions and recommendations of the International Conference on an Agenda of Science for Environment and Development into the 21st Century (ASCEND 21) are:

a. Strengthening the scientific basis for sustainable management;

b. Enhancing scientific understanding;

c. Improving long-term scientific assessment;

d. Building up scientific capacity and capability.

PROGRAMME AREAS

A. Strengthening the scientific basis for sustainable management

Basis for action

35.5. Sustainable development requires taking longer-term perspectives, integrating local and regional effects of global change into the development process, and using the best scientific and traditional knowledge available. The development process should be constantly re-evaluated, in light of the findings of scientific research, to ensure that resource utilization has reduced impacts on the Earth system. Even so, the future is uncertain, and there will be surprises. Good environmental and developmental management policies must therefore be scientifically robust, seeking to keep open a range of options to ensure flexibility of response. The precautionary approach is important. Often, there is a communication gap among scientists, policy makers, and the public at large, whose interests are articulated by both governmental and non-governmental organizations. Better communication is required among scientists, decision makers, and the general public.

Objectives

35.6. The primary objective is for each country with the support of international organizations, as requested, to identify the state of its scientific knowledge and its research needs and priorities in order to achieve, as soon as possible, substantial improvements in:

a. Large-scale widening of the scientific base and strengthening of scientific and research capacities and capabilities - in particular, those of developing countries - in areas relevant to environment and development;

b. Environmental and developmental policy formulation, building upon the best scientific knowledge and assessments, and taking into account the need to enhance international cooperation and the relative uncertainties of the various processes and options involved;

c. The interaction between the sciences and decision-making, using the precautionary approach, where appropriate, to change the existing patterns of production and consumption and to gain time for reducing uncertainty with respect to the selection of policy options;

d. The generation and application of knowledge, especially indigenous and local knowledge, to the capacities of different environments and cultures, to achieve sustained levels of development, taking into account interrelations at the national, regional and international levels;

e. Improving cooperation between scientists by promoting interdisciplinary research programmes and activities;

f. Participation of people in setting priorities and in decision-making relating to sustainable development.

Activities

35.7. Countries, with the assistance of international organizations, where required, should:

a. Prepare an inventory of their natural and social science data holdings relevant to the promotion of sustainable development;

b. Identify their research needs and priorities in the context of international research efforts;

c. Strengthen and design appropriate institutional mechanisms at the highest appropriate local, national, subregional and regional levels and within the United Nations system for developing a stronger scientific basis for the improvement of environmental and developmental policy formulation consistent with long-term goals of sustainable development. Current research in this area should be broadened to include more involvement of the public in establishing long-term societal goals for formulating the sustainable development scenarios;

d. Develop, apply and institute the necessary tools for sustainable development, with regard to:

    i. Quality-of-life indicators covering, for example, health, education, social welfare, state of the environment, and the economy;

    ii. Economic approaches to environmentally sound development and new and improved incentive structures for better resource management;

    iii. Long-term environmental policy formulation, risk management and environmentally sound technology assessment;

e. Collect, analyse and integrate data on the linkages between the state of ecosystems and the health of human communities in order to improve knowledge of the cost and benefit of different development policies and strategies in relation to health and the environment, particularly in developing countries;

f. Conduct scientific studies of national and regional pathways to sustainable development, using comparable and complementary methodologies. Such studies, coordinated by an international science effort, should to a large extent involve local expertise and be conducted by multidisciplinary teams from regional networks and/or research centres, as appropriate and according to national capacities and the available resources;

g. Improve capabilities for determining scientific research priorities at the national, regional and global levels to meet the needs of sustainable development. This is a process that involves scientific judgements regarding short-term and long-term benefits and possible long-term costs and risks. It should be adaptive and responsive to perceived needs and be carried out via transparent, "user-friendly", risk-evaluation methodologies;

h. Develop methods to link the findings of the established sciences with the indigenous knowledge of different cultures. The methods should be tested using pilot studies. They should be developed at the local level and should concentrate on the links between the traditional knowledge of indigenous groups and corresponding, current "advanced science", with particular focus on disseminating and applying the results to environmental protection and sustainable development.

Means of implementation

(a) Financing and cost evaluation

35.8. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $150 million, including about $30 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

35.9. The scientific and technological means include the following:

a. Supporting new scientific research programmes, including their socio-economic and human aspects, at the community, national, subregional, regional and global levels, to complement and encourage synergies between traditional and conventional scientific knowledge and practices and strengthening interdisciplinary research related to environmental degradation and rehabilitation;

b. Setting up demonstration models of different types (e.g., socio-economic, environmental conditions) to study methodologies and formulate guidelines;

c. Supporting research by developing relative-risk evaluation methods to assist policy makers in ranking scientific research priorities.

B. Enhancing scientific understanding

Basis for action

35.10. In order to promote sustainable development, more extensive knowledge is required of the Earth's carrying capacity, including the processes that could either impair or enhance its ability to support life. The global environment is changing more rapidly than at any time in recent centuries; as a result, surprises may be expected, and the next century could see significant environmental changes. At the same time, the human consumption of energy, water and non-renewable resources is increasing, on both a total and a per capita basis, and shortages may ensue in many parts of the world even if environmental conditions were to remain unchanged. Social processes are subject to multiple variations across time and space, regions and culture. They both affect and are influenced by changing environmental conditions. Human factors are key driving forces in these intricate sets of relationships and exert their influence directly on global change. Therefore, study of the human dimensions of the causes and consequences of environmental change and of more sustainable development paths is essential.

Objectives

35.11. One key objective is to improve and increase the fundamental understanding of the linkages between human and natural environmental systems and improve the analytical and predictive tools required to better understand the environmental impacts of development options by:

a. Carrying out research programmes in order better to understand the carrying capacity of the Earth as conditioned by its natural systems, such as the biogeochemical cycles, the atmosphere/hydrosphere/lithosphere/cryosphere system, the biosphere and biodiversity, the agro-ecosystem and other terrestrial and aquatic ecosystems;

b. Developing and applying new analytical and predictive tools in order to assess more accurately the ways in which the Earth's natural systems are being increasingly influenced by human actions, both deliberate and inadvertent, and demographic trends, and the impact and consequences of those actions and trends;

c. Integrating physical, economic and social sciences in order better to understand the impacts of economic and social behaviour on the environment and of environmental degradation on local and global economies.

Activities

35.12. The following activities should be undertaken:

a. Support development of an expanded monitoring network to describe cycles (for example, global, biogeochemical and hydrological cycles) and test hypotheses regarding their behaviour, and improve research into the interactions among the various global cycles and their consequences at national, subregional, regional and global levels as guides to tolerance and vulnerability;

b. Support national, subregional, regional and international observation and research programmes in global atmospheric chemistry and the sources and sinks of greenhouse gases, and ensure that the results are presented in a publicly accessible and understandable form;

c. Support national, subregional, regional and international research programmes on marine and terrestrial systems, strengthen global terrestrial databases of their components, expand corresponding systems for monitoring their changing states and enhance predictive modelling of the Earth system and its subsystems, including modelling of the functioning of these systems assuming different intensities of human impact. The research programmes should include the programmes mentioned in other Agenda 21 chapters which support mechanisms for cooperation and coherence of research programmes on global change;

d. Encourage coordination of satellite missions, the networks, systems and procedures for processing and disseminating their data; and develop the interface with the research users of Earth observation data and with the United Nations EARTHWATCH system;

e. Develop the capacity for predicting the responses of terrestrial, freshwater, coastal and marine ecosystems and biodiversity to short- and long-term perturbations of the environment, and develop further restoration ecology;

f. Study the role of biodiversity and the loss of species in the functioning of ecosystems and the global life-support system;

g. Initiate a global observing system of parameters needed for the rational management of coastal and mountain zones and significantly expand freshwater quantity/quality monitoring systems, particularly in developing countries;

h. In order to understand the Earth as a system, develop Earth observation systems from space which will provide integrated, continuous and long-term measurements of the interactions of the atmosphere, hydrosphere and lithosphere, and develop a distribution system for data which will facilitate the utilization of data obtained through observation;

i. Develop and apply systems and technology that automatically collect, record and transmit data and information to data and analysis centres, in order to monitor marine, terrestrial and atmospheric processes and provide advance warning of natural disasters;

j. Enhance the contribution of the engineering sciences to multidisciplinary research programmes on the Earth system, in particular with regard to increasing emergency preparedness and reducing the negative effects of major natural disasters;

k. Intensify research to integrate the physical, economic and social sciences to better understand the impacts of economic and social behaviour on the environment and of environmental degradation on local and global economies and, in particular:

    a. Develop research on human attitudes and behaviour as driving forces central to an understanding of the causes and consequences of environmental change and resource use;

    b. Promote research on human, economic and social responses to global change;

l. Support development of new user-friendly technologies and systems that facilitate the integration of multidisciplinary, physical, chemical, biological and social/human processes which, in turn, provide information and knowledge for decision makers and the general public.

Means of implementation

(a) Financing and cost evaluation

35.13. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $2 billion, including about $1.5 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

35.14. The scientific and technological means include the following:

a. Supporting and using the relevant national research activities of academia, research institutes and governmental and non-governmental organizations, and promoting their active participation in regional and global programmes, particularly in developing countries;

b. Increasing the use of appropriate enabling systems and technologies, such as supercomputers, space-based observational technology, Earth- and ocean-based observational technologies, data management and database technologies and, in particular, developing and expanding the Global Climate Observing System.

C. Improving long-term scientific assessment

Basis for action

35.15. Meeting scientific research needs in the environment/development field is only the first step in the support that the sciences can provide for the sustainable development process. The knowledge acquired may then be used to provide scientific assessments (audits) of the current status and for a range of possible future conditions. This implies that the biosphere must be maintained in a healthy state and that losses in biodiversity must be slowed down. Although many of the long-term environmental changes that are likely to affect people and the biosphere are global in scale, key changes can often be made at the national and local levels. At the same time, human activities at the local and regional levels often contribute to global threats - e.g., stratospheric ozone depletion. Thus scientific assessments and projections are required at the global, regional and local levels. Many countries and organizations already prepare reports on the environment and development which review current conditions and indicate future trends. Regional and global assessments could make full use of such reports but should be broader in scope and include the results of detailed studies of future conditions for a range of assumptions about possible future human responses, using the best available models. Such assessments should be designed to map out manageable development pathways within the environmental and socio-economic carrying capacity of each region. Full use should be made of traditional knowledge of the local environment.

Objectives

35.16. The primary objective is to provide assessments of the current status and trends in major developmental and environmental issues at the national, subregional, regional and global levels on the basis of the best available scientific knowledge in order to develop alternative strategies, including indigenous approaches, for the different scales of time and space required for long-term policy formulation.

Activities

35.17. The following activities should be undertaken:

a. Coordinate existing data- and statistics-gathering systems relevant to developmental and environmental issues so as to support preparation of long-term scientific assessments - for example, data on resource depletion, import/export flows, energy use, health impacts and demographic trends; apply the data obtained through the activities identified in programme area B to environment/development assessments at the global, regional and local levels; and promote the wide distribution of the assessments in a form that is responsive to public needs and can be widely understood;

b. Develop a methodology to carry out national and regional audits and a five-year global audit on an integrated basis. The standardized audits should help to refine the pattern and character of development, examining in particular the capacities of global and regional life-supporting systems to meet the needs of human and non-human life forms and identifying areas and resources vulnerable to further degradation. This task would involve the integration of all relevant sciences at the national, regional, and global levels, and would be organized by governmental agencies, non-governmental organizations, universities and research institutions, assisted by international governmental and non-governmental organizations and United Nations bodies, when necessary and as appropriate. These audits should then be made available to the general public.

Means of implementation

Financing and cost evaluation

35.18. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $35 million, including about $18 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

35.19. With regard to the existing data requirements under programme area A, support should be provided for national data collection and warning systems. This would involve setting up database, information and reporting systems, including data assessment and information dissemination in each region.

D. Building up scientific capacity and capability

Basis for action

35.20. In view of the increasing role the sciences have to play in dealing with the issues of environment and development, it is necessary to build up scientific capacity and strengthen such capacity in all countries - particularly in developing countries - to enable them to participate fully in the generation and application of the results of scientific research and development concerning sustainable development. There are many ways to build up scientific and technological capacity. Some of the most important of them are the following: education and training in science and technology; assistance to developing countries to improve infrastructures for research and development which could enable scientists to work more productively; development of incentives to encourage research and development; and greater utilization of their results in the productive sectors of the economy. Such capacity-building would also form the basis for improving public awareness and understanding of the sciences. Special emphasis must be put on the need to assist developing countries to strengthen their capacities to study their own resource bases and ecological systems and manage them better in order to meet national, regional and global challenges. Furthermore, in view of the size and complexity of global environmental problems, a need for more specialists in several disciplines has become evident world wide.

Objectives

35.21. The primary objective is to improve the scientific capacities of all countries - in particular, those of developing countries - with specific regard to:

a. Education, training and facilities for local research and development and human resource development in basic scientific disciplines and in environment-related sciences, utilizing where appropriate traditional and local knowledge of sustainability;

b. A substantial increase by the year 2000 in the number of scientists - particularly women scientists - in those developing countries where their number is at present insufficient;

c. Reducing significantly the exodus of scientists from developing countries and encouraging those who have left to return;

d. Improving access to relevant information for scientists and decision makers, with the aim of improving public awareness and participation in decision-making;

e. Involvement of scientists in national, regional and global environmental and developmental research programmes, including multidisciplinary research;

f. Periodic academic update of scientists from developing countries in their respective fields of knowledge.

Activities

35.22. The following activities should be undertaken:

a. Promote the education and training of scientists, not only in their disciplines but also in their ability to identify, manage and incorporate environmental considerations into research and development projects; ensure that a sound base in natural systems, ecology and resource management is provided; and develop specialists capable of working in interdisciplinary programmes related to environment and development, including the field of applied social sciences;

b. Strengthen the scientific infrastructure in schools, universities and research institutions - particularly those in developing countries - by the provision of adequate scientific equipment and access to current scientific literature, for the purpose of achieving and sustaining a critical mass of highly qualified scientists in these countries;

c. Develop and expand national scientific and technological databases, processing data in unified formats and systems, and allowing full and open access to the depository libraries of regional scientific and technological information networks. Promote submission of scientific and technological information and databases to global or regional data centres and network systems;

d. Develop and expand regional and global scientific and technological information networks which are based on and linked to national scientific and technological databases; collect, process and disseminate information from regional and global scientific programmes; expand activities to reduce information barriers due to language differences. Increase the applications - particularly in developing countries - of computer-based retrieval systems in order to cope with the growth of scientific literature;

e. Develop, strengthen and forge new partnerships among national, regional and global capacities to promote the full and open exchange of scientific and technological data and information and to facilitate technical assistance related to environmentally sound and sustainable development. This should be done through the development of mechanisms for the sharing of basic research, data and information, and the improvement and development of international networks and centres, including regional linking with national scientific databases, for research, training and monitoring. Such mechanisms should be designed so as to enhance professional cooperation among scientists in all countries and to establish strong national and regional alliances between industry and research institutions;

f. Improve and develop new links between existing networks of natural and social scientists and universities at the international level in order to strengthen national capacities in the formulation of policy options in the field of environment and development;

g. Compile, analyse and publish information on indigenous environmental and developmental knowledge, and assist the communities that possess such knowledge to benefit from them.

Means of implementation

(a) Financing and cost evaluation

35.23. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $750 million, including about $470 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

35.24. Such means include increasing and strengthening regional multidisciplinary research and training networks and centres making optimal use of existing facilities and associated sustainable development and technology support systems in developing regions. Promote and use the potential of independent initiatives and indigenous innovations and entrepreneurship. The function of such networks and centres could include, for example:

a. Support and coordination of scientific cooperation among all nations in the region;

b. Linking with monitoring centres and carrying out assessment of environmental and developmental conditions;

c. Support and coordination of national studies of pathways towards sustainable development;

d. Organization of science education and training;

e. Establishment and maintenance of information, monitoring and assessment systems and databases.

(c) Capacity-building

35.25. Capacity-building includes the following:

a. Creating conditions (e.g., salaries, equipment, libraries) to ensure that the scientists will work effectively in their home countries;

b. Enhancing national, regional and global capacities for carrying out scientific research and applying scientific and technological information to environmentally sound and sustainable development. This includes a need to increase financial resources for global and regional scientific and technological information networks, as may be appropriate, so that they will be able to function effectively and efficiently in satisfying the scientific needs of developing countries. Ensure the capacity-building of women by recruiting more women in research and research training.

Agenda 21 – Chapter 36
PROMOTING EDUCATION, PUBLIC AWARENESS AND TRAINING

36.1. Education, raising of public awareness and training are linked to virtually all areas in Agenda 21, and even more closely to the ones on meeting basic needs, capacity-building, data and information, science, and the role of major groups. This chapter sets out broad proposals, while specific suggestions related to sectoral issues are contained in other chapters. The Declaration and Recommendations of the Tbilisi Intergovernmental Conference on Environmental Education 1/ organized by UNESCO and UNEP and held in 1977, have provided the fundamental principles for the proposals in this document.

36.2. Programme areas described in the present chapter are:

a. Reorienting education towards sustainable development;

b. Increasing public awareness;

c. Promoting training.

PROGRAMME AREAS

A. Reorienting education towards sustainable development

Basis for action

36.3. Education, including formal education, public awareness and training should be recognized as a process by which human beings and societies can reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues. While basic education provides the underpinning for any environmental and development education, the latter needs to be incorporated as an essential part of learning. Both formal and non-formal education are indispensable to changing people's attitudes so that they have the capacity to assess and address their sustainable development concerns. It is also critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decision-making. To be effective, environment and development education should deal with the dynamics of both the physical/biological and socio-economic environment and human (which may include spiritual) development, should be integrated in all disciplines, and should employ formal and non-formal methods and effective means of communication.

Objectives

36.4. Recognizing that countries, regional and international organizations will develop their own priorities and schedules for implementation in accordance with their needs, policies and programmes, the following objectives are proposed:

- To endorse the recommendations arising from the World Conference on Education for All: Meeting Basic Learning Needs 2/ (Jomtien, Thailand, 5-9 March 1990) and to strive to ensure universal access to basic education, and to achieve primary education for at least 80 per cent of girls and 80 per cent of boys of primary school age through formal schooling or non-formal education and to reduce the adult illiteracy rate to at least half of its 1990 level. Efforts should focus on reducing the high illiteracy levels and redressing the lack of basic education among women and should bring their literacy levels into line with those of men;

- To achieve environmental and development awareness in all sectors of society on a world-wide scale as soon as possible;

- To strive to achieve the accessibility of environmental and development education, linked to social education, from primary school age through adulthood to all groups of people;

- To promote integration of environment and development concepts, including demography, in all educational programmes, in particular the analysis of the causes of major environment and development issues in a local context, drawing on the best available scientific evidence and other appropriate sources of knowledge, and giving special emphasis to the further training of decision makers at all levels.

Activities

36.5. Recognizing that countries and regional and international organizations will develop their own priorities and schedules for implementation in accordance with their needs, policies and programmes, the following activities are proposed:

a. All countries are encouraged to endorse the recommendations of the Jomtien Conference and strive to ensure its Framework for Action. This would encompass the preparation of national strategies and actions for meeting basic learning needs, universalizing access and promoting equity, broadening the means and scope of education, developing a supporting policy context, mobilizing resources and strengthening international cooperation to redress existing economic, social and gender disparities which interfere with these aims. Non-governmental organizations can make an important contribution in designing and implementing educational programmes and should be recognized;

b. Governments should strive to update or prepare strategies aimed at integrating environment and development as a cross-cutting issue into education at all levels within the next three years. This should be done in cooperation with all sectors of society. The strategies should set out policies and activities, and identify needs, cost, means and schedules for their implementation, evaluation and review. A thorough review of curricula should be undertaken to ensure a multidisciplinary approach, with environment and development issues and their socio-cultural and demographic aspects and linkages. Due respect should be given to community-defined needs and diverse knowledge systems, including science, cultural and social sensitivities;

c. Countries are encouraged to set up national advisory environmental education coordinating bodies or round tables representative of various environmental, developmental, educational, gender and other interests, including non-governmental organizations, to encourage partnerships, help mobilize resources, and provide a source of information and focal point for international ties. These bodies would help mobilize and facilitate different population groups and communities to assess their own needs and to develop the necessary skills to create and implement their own environment and development initiatives;

d. Educational authorities, with the appropriate assistance from community groups or non-governmental organizations, are recommended to assist or set up pre-service and in-service training programmes for all teachers, administrators, and educational planners, as well as non-formal educators in all sectors, addressing the nature and methods of environmental and development education and making use of relevant experience of non-governmental organizations;

e. Relevant authorities should ensure that every school is assisted in designing environmental activity work plans, with the participation of students and staff. Schools should involve schoolchildren in local and regional studies on environmental health, including safe drinking water, sanitation and food and ecosystems and in relevant activities, linking these studies with services and research in national parks, wildlife reserves, ecological heritage sites etc.;

f. Educational authorities should promote proven educational methods and the development of innovative teaching methods for educational settings. They should also recognize appropriate traditional education systems in local communities;

g. Within two years the United Nations system should undertake a comprehensive review of its educational programmes, encompassing training and public awareness, to reassess priorities and reallocate resources. The UNESCO/UNEP International Environmental Education Programme should, in cooperation with the appropriate bodies of the United Nations system, Governments, non-governmental organizations and others, establish a programme within two years to integrate the decisions of the Conference into the existing United Nations framework adapted to the needs of educators at different levels and circumstances. Regional organizations and national authorities should be encouraged to elaborate similar parallel programmes and opportunities by conducting an analysis of how to mobilize different sectors of the population in order to assess and address their environmental and development education needs;

h. There is a need to strengthen, within five years, information exchange by enhancing technologies and capacities necessary to promote environment and development education and public awareness. Countries should cooperate with each other and with the various social sectors and population groups to prepare educational tools that include regional environment and development issues and initiatives, using learning materials and resources suited to their own requirements;

i. Countries could support university and other tertiary activities and networks for environmental and development education. Cross-disciplinary courses could be made available to all students. Existing regional networks and activities and national university actions which promote research and common teaching approaches on sustainable development should be built upon, and new partnerships and bridges created with the business and other independent sectors, as well as with all countries for technology, know-how, and knowledge exchange;

j. Countries, assisted by international organizations, non-governmental organizations and other sectors, could strengthen or establish national or regional centres of excellence in interdisciplinary research and education in environmental and developmental sciences, law and the management of specific environmental problems. Such centres could be universities or existing networks in each country or region, promoting cooperative research and information sharing and dissemination. At the global level these functions should be performed by appropriate institutions;

k. Countries should facilitate and promote non-formal education activities at the local, regional and national levels by cooperating with and supporting the efforts of non-formal educators and other community-based organizations. The appropriate bodies of the United Nations system in cooperation with non-governmental organizations should encourage the development of an international network for the achievement of global educational aims. At the national and local levels, public and scholastic forums should discuss environmental and development issues, and suggest sustainable alternatives to policy makers;

l. Educational authorities, with appropriate assistance of non-governmental organizations, including women's and indigenous peoples' organizations, should promote all kinds of adult education programmes for continuing education in environment and development, basing activities around elementary/secondary schools and local problems. These authorities and industry should encourage business, industrial and agricultural schools to include such topics in their curricula. The corporate sector could include sustainable development in their education and training programmes. Programmes at a post-graduate level should include specific courses aiming at the further training of decision makers;

m. Governments and educational authorities should foster opportunities for women in non-traditional fields and eliminate gender stereotyping in curricula. This could be done by improving enrolment opportunities, including females in advanced programmes as students and instructors, reforming entrance and teacher staffing policies and providing incentives for establishing child-care facilities, as appropriate. Priority should be given to education of young females and to programmes promoting literacy among women;

n. Governments should affirm the rights of indigenous peoples, by legislation if necessary, to use their experience and understanding of sustainable development to play a part in education and training;

o. The United Nations could maintain a monitoring and evaluative role regarding decisions of the United Nations Conference on Environment and Development on education and awareness, through the relevant United Nations agencies. With Governments and non-governmental organizations, as appropriate, it should present and disseminate decisions in a variety of forms, and should ensure the continuous implementation and review of the educational implications of Conference decisions, in particular through relevant events and conferences.

Means of implementation Financing and cost evaluation

36.6. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $8 billion to $9 billion, including about $3.5 billion to $4.5 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

36.7. In the light of country-specific situations, more support for education, training and public awareness activities related to environment and development could be provided, in appropriate cases, through measures such as the following:

a. Giving higher priority to those sectors in budget allocations, protecting them from structural cutting requirements;

b. Shifting allocations within existing education budgets in favour of primary education, with focus on environment and development;

c. Promoting conditions where a larger share of the cost is borne by local communities, with rich communities assisting poorer ones;

d. Obtaining additional funds from private donors concentrating on the poorest countries, and those with rates of literacy below 40 per cent;

e. Encouraging debt for education swaps;

f. Lifting restrictions on private schooling and increasing the flow of funds from and to non-governmental organizations, including small-scale grass-roots organizations;

g. Promoting the effective use of existing facilities, for example, multiple school shifts, fuller development of open universities and other long-distance teaching;

h. Facilitating low-cost or no-cost use of mass media for the purposes of education;

i. Encouraging twinning of universities in developed and developing countries.

B. **Increasing public awareness**

Basis for action

36.8. There is still a considerable lack of awareness of the interrelated nature of all human activities and the environment, due to inaccurate or insufficient information. Developing countries in particular lack relevant technologies and expertise. There is a need to increase public sensitivity to environment and development problems and involvement in their solutions and foster a sense of personal environmental responsibility and greater motivation and commitment towards sustainable development.

Objective

36.9. The objective is to promote broad public awareness as an essential part of a global education effort to strengthen attitudes, values and actions which are compatible with sustainable development. It is important to stress the principle of devolving authority, accountability and resources to the most appropriate level with preference given to local responsibility and control over awareness-building activities.

Activities

36.10. Recognizing that countries, regional and international organizations will develop their own priorities and schedules for implementation in accordance with their needs, policies and programmes, the following activities are proposed:

a. Countries should strengthen existing advisory bodies or establish new ones for public environment and development information, and should coordinate activities with, among others, the United Nations, non-governmental organizations and important media. They should encourage public participation in discussions of environmental policies and assessments. Governments should also facilitate and support national to local networking of information through existing networks;

b. The United Nations system should improve its outreach in the course of a review of its education and public awareness activities to promote greater involvement and coordination of all parts of the system, especially its information bodies and regional and country operations. Systematic surveys of the impact of awareness programmes should be conducted, recognizing the needs and contributions of specific community groups;

c. Countries and regional organizations should be encouraged, as appropriate, to provide public environmental and development information services for raising the awareness of all groups, the private sector and particularly decision makers;

d. Countries should stimulate educational establishments in all sectors, especially the tertiary sector, to contribute more to awareness building. Educational materials of all kinds and for all audiences should be based on the best available scientific information, including the natural, behavioural and social sciences, and taking into account aesthetic and ethical dimensions;

e. Countries and the United Nations system should promote a cooperative relationship with the media, popular theatre groups, and entertainment and advertising industries by initiating discussions to mobilize their experience in shaping public behaviour and consumption patterns and making wide use of their methods. Such cooperation would also increase the active public participation in the debate on the environment. UNICEF should make child-oriented material available to media as an educational tool, ensuring close cooperation between the out-of-school public information sector and the school curriculum, for the primary level. UNESCO, UNEP and universities should enrich pre-service curricula for journalists on environment and development topics;

f. Countries, in cooperation with the scientific community, should establish ways of employing modern communication technologies for effective public outreach. National and local educational authorities and relevant United Nations agencies should expand, as appropriate, the use of audio-visual methods, especially in rural areas in mobile units, by producing television and radio programmes for developing countries, involving local participation, employing interactive multimedia methods and integrating advanced methods with folk media;

g. Countries should promote, as appropriate, environmentally sound leisure and tourism activities, building on The Hague Declaration of Tourism (1989) and the current programmes of the World Tourism Organization and UNEP, making suitable use of museums, heritage sites, zoos, botanical gardens, national parks, and other protected areas;

h. Countries should encourage non-governmental organizations to increase their involvement in environmental and development problems, through joint awareness initiatives and improved interchange with other constituencies in society;

i. Countries and the United Nations system should increase their interaction with and include, as appropriate, indigenous people in the management, planning and development of their local environment, and should promote dissemination of traditional and socially learned knowledge through means based on local customs, especially in rural areas, integrating these efforts with the electronic media, whenever appropriate;

j. UNICEF, UNESCO, UNDP and non-governmental organizations should develop support programmes to involve young people and children in environment and development issues, such as children's and youth hearings and building on decisions of the World Summit for Children (A/45/625, annex);

k. Countries, the United Nations and non-governmental organizations should encourage mobilization of both men and women in awareness campaigns, stressing the role of the family in environmental activities, women's contribution to transmission of knowledge and social values and the development of human resources;

l. Public awareness should be heightened regarding the impacts of violence in society.

Means of implementation Financing and cost evaluation

36.11. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.2 billion, including about $110 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

C. Promoting training

Basis for action

36.12. Training is one of the most important tools to develop human resources and facilitate the transition to a more sustainable world. It should have a job-specific focus, aimed at filling gaps in knowledge and skill that would help individuals find employment and be involved in environmental and development work. At the same time, training programmes should promote a greater awareness of environment and development issues as a two-way learning process.

Objectives

36.13. The following objectives are proposed:

a. To establish or strengthen vocational training programmes that meet the needs of environment and development with ensured access to training opportunities, regardless of social status, age, gender, race or religion;

b. To promote a flexible and adaptable workforce of various ages equipped to meet growing environment and development problems and changes arising from the transition to a sustainable society;

c. To strengthen national capacities, particularly in scientific education and training, to enable Governments, employers and workers to meet their environmental and development objectives and to facilitate the transfer and assimilation of new environmentally sound, socially acceptable and appropriate technology and know-how;

d. To ensure that environmental and human ecological considerations are integrated at all managerial levels and in all functional management areas, such as marketing, production and finance.

Activities

36.14. Countries with the support of the United Nations system should identify workforce training needs and assess measures to be taken to meet those needs. A review of progress in this area could be undertaken by the United Nations system in 1995.

36.15. National professional associations are encouraged to develop and review their codes of ethics and conduct to strengthen environmental connections and commitment. The training and personal development components of programmes sponsored by professional bodies should ensure incorporation of skills and information on the implementation of sustainable development at all points of policy- and decision-making.

36.16. Countries and educational institutions should integrate environmental and developmental issues into existing training curricula and promote the exchange of their methodologies and evaluations.

36.17. Countries should encourage all sectors of society, such as industry, universities, government officials and employees, non-governmental organizations and community organizations, to include an environmental management component in all relevant training activities, with emphasis on meeting immediate skill requirements through short-term formal and in-plant vocational and management training. Environmental management training capacities should be strengthened, and specialized "training of trainers" programmes should be established to support training at the national and enterprise levels. New training approaches for existing environmentally sound practices should be developed that create employment opportunities and make maximum use of local resource-based methods.

36.18. Countries should strengthen or establish practical training programmes for graduates from vocational schools, high schools and universities, in all countries, to enable them to meet labour market requirements and to achieve sustainable livelihoods. Training and retraining programmes should be established to meet structural adjustments which have an impact on employment and skill qualifications.

36.19. Governments are encouraged to consult with people in isolated situations, whether geographically, culturally or socially, to ascertain their needs for training to enable them to contribute more fully to developing sustainable work practices and lifestyles.

36.20. Governments, industry, trade unions, and consumers should promote an understanding of the interrelationship between good environment and good business practices.

36.21. Countries should develop a service of locally trained and recruited environmental technicians able to provide local people and communities, particularly in deprived urban and rural areas, with the services they require, starting from primary environmental care.

36.22. Countries should enhance the ability to gain access to, analyse and effectively use information and knowledge available on environment and development. Existing or established special training programmes should be strengthened to support information needs of special groups. The impact of these programmes on productivity, health, safety and employment should be evaluated. National and regional environmental labour-market information systems should be developed that would supply, on a continuing basis, data on environmental job and training opportunities. Environment and development training resource-guides should be prepared and updated, with information on training programmes, curricula, methodologies and evaluation results at the local, national, regional and international levels.

36.23. Aid agencies should strengthen the training component in all development projects, emphasizing a multidisciplinary approach, promoting awareness and providing the necessary skills for transition to a sustainable society. The environmental management guidelines of UNDP for operational activities of the United Nations system may contribute to this end.

36.24. Existing networks of employers' and workers' organizations, industry associations and non-governmental organizations should facilitate the exchange of experience concerning training and awareness programmes.

36.25. Governments, in cooperation with relevant international organizations, should develop and implement strategies to deal with national, regional and local environmental threats and emergencies, emphasizing urgent practical training and awareness programmes for increasing public preparedness.

36.26. The United Nations system, as appropriate, should extend its training programmes, particularly its environmental training and support activities for employers' and workers' organizations.

Means of implementation Financing and cost evaluation

36.27. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $5 billion, including about $2 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

Notes

1. Intergovernmental Conference on Environmental Education: Final Report (Paris, UNESCO, 1978), chap. III.

2. Final Report of the World Conference on Education for All: Meeting Basic Learning Needs, Jomtien, Thailand, 5-9 March 1990 (New York, Inter-Agency Commission (UNDP, UNESCO, UNICEF, World Bank) for the World Conference on Education for All, 1990).

Agenda 21 – Chapter 37
NATIONAL MECHANISMS AND INTERNATIONAL COOPERATION FOR CAPACITY-BUILDING IN DEVELOPING COUNTRIES

PROGRAMME AREA

Basis for action

37.1. The ability of a country to follow sustainable development paths is determined to a large extent by the capacity of its people and its institutions as well as by its ecological and geographical conditions. Specifically, capacity-building encompasses the country's human, scientific, technological, organizational, institutional and resource capabilities. A fundamental goal of capacity-building is to enhance the ability to evaluate and address the crucial questions related to policy choices and modes of implementation among development options, based on an understanding of environmental potentials and limits and of needs as perceived by the people of the country concerned. As a result, the need to strengthen national capacities is shared by all countries.

37.2. Building endogenous capacity to implement Agenda 21 will require the efforts of the countries themselves in partnership with relevant United Nations organizations, as well as with developed countries. The international community at the national, subregional and regional levels, municipalities, non-governmental organizations, universities and research centres, and business and other private institutions and organizations could also assist in these efforts. It is essential for individual countries to identify priorities and determine the means for building the capacity and capability to implement Agenda 21, taking into account their environmental and economic needs. Skills, knowledge and technical know-how at the individual and institutional levels are necessary for institution-building, policy analysis and development management, including the assessment of alternative courses of action with a view to enhancing access to and tranfer of technology and promoting economic development. Technical cooperation, including that related to technology transfer and know-how, encompasses the whole range of activities to develop or strengthen individual and group capacities and capabilities. It should serve the purpose of long-term capacity-building and needs to be managed and coordinated by the countries themselves. Technical cooperation, including that related to technology transfer and know-how, is effective only when it is derived from and related to a country's own strategies and priorities on environment and development and when development agencies and Governments define improved and consistent policies and procedures to support this process.

Objectives

37.3. The overall objectives of endogenous capacity-building in this programme area are to develop and improve national and related subregional and regional capacities and capabilities for sustainable development, with the involvement of the non-governmental sectors. The programme should assist by:

a. Promoting an ongoing participatory process to define country needs and priorities in promoting Agenda 21 and to give importance to technical and professional human resource development and development of institutional capacities and capabilities on the agenda of countries, with due recognition of the potential for optimum use of existing human resources as well as enhancement of the efficiency of existing institutions and non-governmental organizations, including scientific and technological institutions;

b. Reorienting technical cooperation and, in that process, setting new priorities in the field, including that related to transfer of technology and know-how processes, while giving due attention to the specific conditions and individual needs of recipients, and improving coordination among providers of assistance for support to countries' own programmes of action. This coordination should also include non-governmental organizations and scientific and technological institutions, as well as business and industry whenever appropriate;

c. Shifting time horizons in programme planning and implementation for the development and strengthening of institutional structures to permit an enhancement of their ability to respond to new longer-term challenges rather than concentrating only on immediate problems;

d. Improving and reorienting existing international multilateral institutions with responsibilities for environment and/or development matters to ensure that those institutions have the capability and capacity to integrate environment and development;

e. Improving institutional capacity and capability, both public and private, in order to evaluate the environmental impact of all development projects.

37.4. Specific objectives include the following:

a. Each country should aim to complete, as soon as practicable, if possible by 1994, a review of capacity- and capability-building requirements for devising national sustainable development strategies, including those for generating and implementing its own Agenda 21 action programme;

b. By 1997, the Secretary-General should submit to the General Assembly a report on the achievement of improved policies, coordination systems and procedures for strengthening the implementation of technical cooperation programmes for sustainable development, as well as on additional measures required to strengthen such cooperation. That report should be prepared on the basis of information provided by countries, international organizations, environment and development institutions, donor agencies and non-governmental partners.

Activities

a. Building a national consensus and formulating capacity-building strategies for implementing Agenda 21

37.5. As an important aspect of overall planning, each country should seek internal consensus at all levels of society on policies and programmes needed for short- and long-term capacity-building to implement its Agenda 21 programme. This consensus should result from a participatory dialogue of relevant interest groups and lead to an identification of skill gaps, institutional capacities and capabilities, technological and scientific requirements and resource needs to enhance environmental knowledge and administration to integrate environment and development. UNDP in partnership with relevant specialized agencies and other international intergovernmental and non-governmental organizations could assist, upon request of Governments, in the identification of the requirements for technical cooperation, including those related to technology transfer and know-how and development assistance for the implementation of Agenda 21. The national planning process together, where appropriate, with national sustainable development action plans or strategies should provide the framework for such cooperation and assistance. UNDP should use and further improve its network of field offices and its broad mandate to provide assistance, using its experience in the field of technical cooperation for facilitating capacity-building at the country and regional levels and making full use of the expertise of other bodies, in particular UNEP, the World Bank and regional commissions and development banks, as well as relevant international intergovernmental and non-governmental organizations.

b. Identification of national sources and presentation of requests for technical cooperation, including that related to technology transfer and know-how in the framework of sector strategies

37.6. Countries desiring arrangements for technical cooperation, including that related to transfer of technology and know-how, with international organizations and donor institutions should formulate requests in the framework of long-term sector or subsector capacity-building strategies. Strategies should, as appropriate, address policy adjustments to be implemented, budgetary issues, cooperation and coordination among institutions, human resource requirements, and technology and scientific equipment requirements. They should cover public and private sector needs and consider strengthening scientific training and educational and research programmes, including such training in the developed countries and the strengthening of centres of excellence in developing countries. Countries could designate and strengthen a central unit to organize and coordinate technical cooperation, linking it with the priority-setting and the resource allocation process.

c. Establishment of a review mechanism of technical cooperation in and related to technology transfer and know-how

37.7. Donors and recipients, the organizations and institutions of the United Nations system, and international public and private organizations should review the development of the cooperation process as it relates to technical cooperation, including that related to activities for the transfer of technology and know-how linked to sustainable development. To facilitate this process the Secretary-General could undertake, taking into account work carried out by UNDP and other organizations in preparation for the United Nations Conference on Environment and Development, consultations with developing countries, regional organizations, organizations and institutions of the United Nations system, including regional commissions, and multilateral and bilateral aid and environment agencies, with a view to further strengthening the endogenous capacities of countries and improving technical cooperation, including that related to the technology transfer and know-how process. The following aspects should be reviewed:

a. Evaluation of existing capacity and capability for the integrated management of environment and development, including technical, technological and institutional capacities and capabilities, and facilities to assess the environmental impact of development projects; and evaluation of abilities to respond to and link up with needs for technical cooperation, including that related to technology transfer and know-how, of Agenda 21 and the global conventions on climate change and biological diversity;

b. Assessment of the contribution of existing activities in technical cooperation, including that related to transfer of technology and know-how, towards strengthening and building national capacity and capability for integrated environment and development management and an assessment of the means of improving the quality of international technical cooperation, including that related to transfer of technolgy and know-how;

c. A strategy for shifting to a capacity- and capability-building thrust that recognizes the need for the operational integration of environment and development with longer-term commitments, having as a basis the set of national programmes established by each country, through a participatory process;

d. Consideration of greater use of long-term cooperative arrangements between municipalities, non-governmental organizations, universities, training and research centres and business, public and private institutions with counterparts in other countries or within countries or regions. Programmes such as the Sustainable Development Networks of UNDP should be assessed in this regard;

e. Strengthening of the sustainability of projects by including in the original project design consideration of environmental impacts, the costs of institution-building, human resource development and technology needs, as well as financial and organizational requirements for operation and maintenance;

f. Improvement of technical cooperation, including that related to transfer of technology and know-how and management processes, by giving greater attention to capacity- and capability-building as an integral part of sustainable development strategies for environment and development programmes both in country-related coordination processes, such as consultative groups and round tables, and in sectoral coordination mechanisms to enable developing countries to participate actively in obtaining assistance from different sources.

d. Enhancement of the expertise and collective contribution of the United Nations system for capacity- and capability-building initiatives

37.8. Organizations, organs, bodies and institutions of the United Nations system, together with other international and regional organizations and the public and private sectors, could, as appropriate, strengthen their joint activities in technical cooperation, including that related to transfer of technology and know-how, in order to address linked environment and development issues and to promote coherence and consistency of action. Organizations could assist and reinforce countries, particularly least developed countries, upon request, on matters relating to national environmental and developmental policies, human resource development and fielding of experts, legislation, natural resources and environmental data.

37.9. UNDP, the World Bank and regional multilateral development banks, as part of their participation in national and regional coordination mechanisms, should assist in facilitating capacity- and capability-building at the country level, drawing upon the special expertise and operational capacity of UNEP in the environmental field as well as of the specialized agencies, organizations of the United Nations system and regional and subregional organizations in their respective areas of competence. For this purpose UNDP should mobilize funding for capacity- and capability-building, utilizing its network of field offices and its broad mandate and experience in the field of technical cooperation, including that related to transfer of technology and know-how. UNDP, together with these international organizations, should at the same time continue to develop consultative processes to enhance the mobilization and coordination of funds from the international community for capacity- and capability-building, including the establishment of an appropriate database. These responsibilities may need to be accompanied by strengthening of the capacities of UNDP.

37.10. The national entity in charge of technical cooperation, with the assistance of the UNDP resident representatives and the UNEP representatives, should establish a small group of key actors to steer the process, giving priority to the country's own strategies and priorities. The experience gained through existing planning exercises such as the national reports for the United Nations Conference on Environment and Development, national conservation strategies and environment action plans should be fully used and incorporated into a country-driven, participatory and sustainable development strategy. This should be complemented with information networks and consultations with donor organizations in order to improve coordination, as well as access to the existing body of scientific and technical knowledge and information available in institutions elsewhere.

e. Harmonization of the delivery of assistance at the regional level

37.11. At the regional level, existing organizations should consider the desirability of improved regional and subregional consultative processes and round-table meetings to facilitate the exchange of data, information and experience in the implementation of Agenda 21. UNDP, building on the results of the regional surveys on capacity-building that those regional organizations carried out on the United Nations Conference on Environment and Development initiative, and in collaboration with existing regional, subregional or national organizations with potential for regional coordination, should provide a significant input for this purpose. The relevant national unit should establish a steering mechanism. A periodic review mechanism should be established among the countries of the region with the assistance of the appropriate relevant regional organizations and the participation of development banks, bilateral aid agencies and non-governmental organizations. Other possibilities are to develop national and regional research and training facilities building on existing regional and subregional institutions.

Means of implementation

Financing and cost evaluation

37.12. The cost of bilateral expenditures to developing countries for technical cooperation, including that related to transfer of technology and know-how, is about $15 billion or about 25 per cent of total official development assistance. The implementation of Agenda 21 will require a more effective use of these funds and additional funding in key areas.

37.13. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this chapter to be between $300 million and $1 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

Agenda 21 – Chapter 38
INTERNATIONAL INSTITUTIONAL ARRANGEMENTS

BASIS FOR ACTION

38.1. The mandate of the United Nations Conference on Environment and Development emanates from General Assembly resolution 44/228, in which the Assembly, inter alia, affirmed that the Conference should elaborate strategies and measures to halt and reverse the effects of environmental degradation in the context of increased national and international efforts to promote sustainable and environmentally sound development in all countries and that the promotion of economic growth in developing countries is essential to address problems of environmental degradation. The intergovernmental follow-up to the Conference process shall be within the framework of the United Nations system, with the General Assembly being the supreme policy-making forum that would provide overall guidance to Governments, the United Nations system and relevant treaty bodies. At the same time, Governments, as well as regional economic and technical cooperation organizations, have a responsibility to play an important role in the follow-up to the Conference. Their commitments and actions should be adequately supported by the United Nations system and multilateral financial institutions. Thus, national and international efforts would mutually benefit from one another.

38.2. In fulfilling the mandate of the Conference, there is a need for institutional arrangements within the United Nations system in conformity with, and providing input into, the restructuring and revitalization of the United Nations in the economic, social and related fields, and the overall reform of the United Nations, including ongoing changes in the Secretariat. In the spirit of reform and revitalization of the United Nations system, implementation of Agenda 21 and other conclusions of the Conference shall be based on an action- and result-oriented approach and consistent with the principles of universality, democracy, transparency, cost-effectiveness and accountability.

38.3. The United Nations system, with its multisectoral capacity and the extensive experience of a number of specialized agencies in various spheres of international cooperation in the field of environment and development, is uniquely positioned to assist Governments to establish more effective patterns of economic and social development with a view to achieving the objectives of Agenda 21 and sustainable development.

38.4. All agencies of the United Nations system have a key role to play in the implementation of Agenda 21 within their respective competence. To ensure proper coordination and avoid duplication in the implementation of Agenda 21, there should be an effective division of labour between various parts of the United Nations system based on their terms of reference and comparative advantages. Member States, through relevant governing bodies, are in a position to ensure that these tasks are carried out properly. In order to facilitate evaluation of agencies' performance and promote knowledge of their activities, all bodies of the United Nations system should be required to elaborate and publish reports of their activities concerning the implementation of Agenda 21 on a regular basis. Serious and continuous reviews of their policies, programmes, budgets and activities will also be required.

38.5. The continued active and effective participation of non-governmental organizations, the scientific community and the private sector, as well as local groups and communities, are important in the implementation of Agenda 21.

38.6. The institutional structure envisaged below will be based on agreement on financial resources and mechanisms, technology transfer, the Rio Declaration and Agenda 21. In addition, there has to be an effective link between substantive action and financial support, and this requires close and effective cooperation and exchange of information between the United Nations system and the multilateral financial institutions for the follow-up of Agenda 21 within the institutional arrangement.

OBJECTIVES

38.7. The overall objective is the integration of environment and development issues at national, subregional, regional and international levels, including in the United Nations system institutional arrangements.

38.8. Specific objectives shall be:

a. To ensure and review the implementation of Agenda 21 so as to achieve sustainable development in all countries;

b. To enhance the role and functioning of the United Nations system in the field of environment and development. All relevant agencies, organizations and programmes of the United Nations system should adopt concrete programmes for the implementation of Agenda 21 and also provide policy guidance for United Nations activities or advice to Governments, upon request, within their areas of competence;

c. To strengthen cooperation and coordination on environment and development in the United Nations system;

d. To encourage interaction and cooperation between the United Nations system and other intergovernmental and non-governmental subregional, regional and global institutions and non-governmental organizations in the field of environment and development;

e. To strengthen institutional capabilities and arrangements required for the effective implementation, follow-up and review of Agenda 21;

f. To assist in the strengthening and coordination of national, subregional and regional capacities and actions in the areas of environment and development;

g. To establish effective cooperation and exchange of information between United Nations organs, organizations, programmes and the multilateral financial bodies, within the institutional arrangements for the follow-up of Agenda 21;

h. To respond to continuing and emerging issues relating to environment and development;

i. To ensure that any new institutional arrangements would support revitalization, clear division of responsibilities and the avoidance of duplication in the United Nations system and depend to the maximum extent possible upon existing resources.

INSTITUTIONAL STRUCTURE

A. General Assembly

38.9. The General Assembly, as the highest intergovernmental mechanism, is the principal policy-making and appraisal organ on matters relating to the follow-up of the Conference. The Assembly would organize a regular review of the implementation of Agenda 21. In fulfilling this task, the Assembly could consider the timing, format and organizational aspects of such a review. In particular, the Assembly could consider holding a special session not later than 1997 for the overall review and appraisal of Agenda 21, with adequate preparations at a high level.

B. Economic and Social Council

38.10. The Economic and Social Council, in the context of its role under the Charter vis-a-vis the General Assembly and the ongoing restructuring and revitalization of the United Nations in the economic, social and related fields, would assist the General Assembly by overseeing system-wide coordination in the implementation of Agenda 21 and making recommendations in this regard. In addition, the Council would undertake the task of directing system-wide coordination and integration of environmental and developmental aspects of United Nations policies and programmes and would make appropriate recommendations to the General Assembly, specialized agencies concerned and Member States. Appropriate steps should be taken to obtain regular reports from specialized agencies on their plans and programmes related to the implementation of Agenda 21, pursuant to Article 64 of the Charter of the United Nations. The Economic and Social Council should organize a periodic review of the work of the Commission on Sustainable Development envisaged in paragraph 38.11, as well as of system-wide activities to integrate environment and development, making full use of its high-level and coordination segments.

C. Commission on Sustainable Development

38.11. In order to ensure the effective follow-up of the Conference, as well as to enhance international cooperation and rationalize the intergovernmental decision-making capacity for the integration of environment and development issues and to examine the progress in the implementation of Agenda 21 at the national, regional and international levels, a high-level Commission on Sustainable Development should be established in accordance with Article 68 of the Charter of the United Nations. This Commission would report to the Economic and Social Council in the context of the Council's role under the Charter vis--vis the General Assembly. It would consist of representatives of States elected as members with due regard to equitable geographical distribution. Representatives of non-member States of the Commission would have observer status. The Commission should provide for the active involvement of organs, programmes and organizations of the United Nations system, international financial institutions and other relevant intergovernmental organizations, and encourage the participation of non-governmental organizations, including industry and the business and scientific communities. The first meeting of the Commission should be convened no later than 1993. The Commission should be supported by the secretariat envisaged in paragraph 38.19. Meanwhile the Secretary-General of the United Nations is requested to ensure adequate interim administrative secretariat arrangements.

38.12. The General Assembly, at its forty-seventh session, should determine specific organizational modalities for the work of this Commission, such as its membership, its relationship with other intergovernmental United Nations bodies dealing with matters related to environment and development, and the frequency, duration and venue of its meetings. These modalities should take into account the ongoing process of revitalization and restructuring of the work of the United Nations in the economic, social and related fields, in particular measures recommended by the General Assembly in resolutions 45/264 of 13 May 1991 and 46/235 of 13 April 1992 and other relevant Assembly resolutions. In this respect, the Secretary-General of the United Nations, with the assistance of the Secretary-General of the United Nations Conference on Environment and Development, is requested to prepare for the Assembly a report with appropriate recommendations and proposals.

38.13. The Commission on Sustainable Development should have the following functions:

a. To monitor progress in the implementation of Agenda 21 and activities related to the integration of environmental and developmental goals throughout the United Nations system through analysis and evaluation of reports from all relevant organs, organizations, programmes and institutions of the United Nations system dealing with various issues of environment and development, including those related to finance;

b. To consider information provided by Governments, including, for example, information in the form of periodic communications or national reports regarding the activities they undertake to implement Agenda 21, the problems they face, such as problems related to financial resources and technology transfer, and other environment and development issues they find relevant;

c. To review the progress in the implementation of the commitments contained in Agenda 21, including those related to provision of financial resources and transfer of technology;

d. To receive and analyse relevant input from competent non-governmental organizations, including the scientific and private sectors, in the context of the overall implementation of Agenda 21;

e. To enhance the dialogue, within the framework of the United Nations, with non-governmental organizations and the independent sector, as well as other entities outside the United Nations system;

f. To consider, where appropriate, information regarding the progress made in the implementation of environmental conventions, which could be made available by the relevant Conferences of Parties;

g. To provide appropriate recommendations to the General Assembly through the Economic and Social Council on the basis of an integrated consideration of the reports and issues related to the implementation of Agenda 21;

h. To consider, at an appropriate time, the results of the review to be conducted expeditiously by the Secretary-General of all recommendations of the Conference for capacity-building programmes, information networks, task forces and other mechanisms to support the integration of environment and development at regional and subregional levels.

38.14. Within the intergovernmental framework, consideration should be given to allowing non-governmental organizations, including those related to major groups, particularly women's groups, committed to the implementation of Agenda 21 to have relevant information available to them, including information, reports and other data produced within the United Nations system.

D. The Secretary-General

38.15. Strong and effective leadership on the part of the Secretary-General is crucial, since he/she would be the focal point of the institutional arrangements within the United Nations system for the successful follow-up to the Conference and for the implementation of Agenda 21.

E. High-level inter-agency coordination mechanism

38.16. Agenda 21, as the basis for action by the international community to integrate environment and development, should provide the principal framework for coordination of relevant activities within the United Nations system. To ensure effective monitoring, coordination and supervision of the involvement of the United Nations system in the follow-up to the Conference, there is a need for a coordination mechanism under the direct leadership of the Secretary-General.

38.17. This task should be given to the Administrative Committee on Coordination (ACC), headed by the Secretary-General. ACC would thus provide a vital link and interface between the multilateral financial institutions and other United Nations bodies at the highest administrative level. The Secretary-General should continue to revitalize the functioning of the Committee. All heads of agencies and institutions of the United Nations system shall be expected to cooperate with the Secretary-General fully in order to make ACC work effectively in fulfilling its crucial role and ensure successful implementation of Agenda 21. ACC should consider establishing a special task force, subcommittee or sustainable development board, taking into account the experience of the Designated Officials for Environmental Matters (DOEM) and the Committee of International Development Institutions on Environment (CIDIE), as well as the respective roles of UNEP and UNDP. Its report should be submitted to the relevant intergovernmental bodies.

F. High-level advisory body

38.18. Intergovernmental bodies, the Secretary-General and the United Nations system as a whole may also benefit from the expertise of a high-level advisory board consisting of eminent persons knowledgeable about environment and development, including relevant sciences, appointed by the Secretary-General in their personal capacity. In this regard, the Secretary-General should make appropriate recommendations to the General Assembly at its forty-seventh session.

G. Secretariat support structure

38.19. A highly qualified and competent secretariat support structure within the United Nations Secretariat, drawing, inter alia, on the expertise gained in the Conference preparatory process is essential for the follow-up to the Conference and the implementation of Agenda 21. This secretariat support structure should provide support to the work of both intergovernmental and inter-agency coordination mechanisms. Concrete organizational decisions fall within the competence of the Secretary-General as the chief administrative officer of the Organization, who is requested to report on the provisions to be made, covering staffing implications, as soon as practicable, taking into account gender balance as defined in Article 8 of the Charter of the United Nations and the need for the best use of existing resources in the context of the current and ongoing restructuring of the United Nations Secretariat.

H. Organs, programmes and organizations of the United Nations system

38.20. In the follow-up to the Conference, in particular the implementation of Agenda 21, all relevant organs, programmes and organizations of the United Nations system will have an important role within their respective areas of expertise and mandates in supporting and supplementing national efforts. Coordination and mutual complementarity of their efforts to promote integration of environment and development can be enhanced by encouraging countries to maintain consistent positions in the various governing bodies.

1. United Nations Environment Programme

38.21. In the follow-up to the Conference, there will be a need for an enhanced and strengthened role for UNEP and its Governing Council. The Governing Council should, within its mandate, continue to play its role with regard to policy guidance and coordination in the field of the environment, taking into account the development perspective.

38.22. Priority areas on which UNEP should concentrate include the following:

a. Strengthening its catalytic role in stimulating and promoting environmental activities and considerations throughout the United Nations system;

b. Promoting international cooperation in the field of environment and recommending, as appropriate, policies to this end;

c. Developing and promoting the use of such techniques as natural resource accounting and environmental economics;

d. Environmental monitoring and assessment, both through improved participation by the United Nations system agencies in the Earthwatch programme and expanded relations with private scientific and non-governmental research institutes; strengthening and making operational its early-warning function;

e. Coordination and promotion of relevant scientific research with a view to providing a consolidated basis for decision-making;

f. Dissemination of environmental information and data to Governments and to organs, programmes and organizations of the United Nations system;

g. Raising general awareness and action in the area of environmental protection through collaboration with the general public, non-governmental entities and intergovernmental institutions;

h. Further development of international environmental law, in particular conventions and guidelines, promotion of its implementation, and coordinating functions arising from an increasing number of international legal agreements, inter alia, the functioning of the secretariats of the Conventions, taking into account the need for the most efficient use of resources, including possible co-location of secretariats established in the future;

i. Further development and promotion of the widest possible use of environmental impact assessments, including activities carried out under the auspices of specialized agencies of the United Nations system, and in connection with every significant economic development project or activity;

j. Facilitation of information exchange on environmentally sound technologies, including legal aspects, and provision of training;

k. Promotion of subregional and regional cooperation and support to relevant initiatives and programmes for environmental protection, including playing a major contributing and coordinating role in the regional mechanisms in the field of environment identified for the follow-up to the Conference;

l. Provision of technical, legal and institutional advice to Governments, upon request, in establishing and enhancing their national legal and institutional frameworks, in particular, in cooperation with UNDP capacity-building efforts;

m. Support to Governments, upon request, and development agencies and organs in the integration of environmental aspects into their development policies and programmes, in particular through provision of environmental, technical and policy advice during programme formulation and implementation;

n. Further developing assessment and assistance in cases of environmental emergencies.

38.23. In order to perform all of these functions, while retaining its role as the principal body within the United Nations system in the field of environment and taking into account the development aspects of environmental questions, UNEP would require access to greater expertise and provision of adequate financial resources and it would require closer cooperation and collaboration with development organs and other relevant organs of the United Nations system. Furthermore, the regional offices of UNEP should be strengthened without weakening its headquarters in Nairobi, and UNEP should take steps to reinforce and intensify its liaison and interaction with UNDP and the World Bank.

2. United Nations Development Programme

38.24. UNDP, like UNEP, also has a crucial role in the follow-up to the United Nations Conference on Environment and Development. Through its network of field offices it would foster the United Nations system's collective thrust in support of the implementation of Agenda 21, at the country, regional, interregional and global levels, drawing on the expertise of the specialized agencies and other United Nations organizations and bodies involved in operational activities. The role of the resident representative/resident coordinator of UNDP needs to be strengthened in order to coordinate the field-level activities of the United Nations operational activities.

38.25. Its role should include the following:

a. Acting as the lead agency in organizing United Nations system efforts towards capacity-building at the local, national and regional levels;

b. Mobilizing donor resources on behalf of Governments for capacity-building in recipient countries and, where appropriate, through the use of the UNDP donor round-table mechanisms;

c. Strengthening its own programmes in support of follow-up to the Conference without prejudice to the fifth programming cycle;

d. Assisting recipient countries, upon request, in the establishment and strengthening of national coordination mechanisms and networks related to activities for the follow-up to the Conference;

e. Assisting recipient countries, upon request, in coordinating the mobilization of domestic financial resources;

f. Promoting and strengthening the role and involvement of women, youth and other major groups in recipient countries in the implementation of Agenda 21.

3. United Nations Conference on Trade and Development

38.26. UNCTAD should play an important role in the implementation of Agenda 21 as extended at its eighth session, taking into account the importance of the interrelationships between development, international trade and the environment and in accordance with its mandate in the area of sustainable development.

4. United Nations Sudano-Sahelian Office

38.27. The role of the United Nations Sudano-Sahelian Office (UNSO), with added resources that may become available, operating under the umbrella of UNDP and with the support of UNEP, should be strengthened so that it can assume an appropriate major advisory role and participate effectively in the implementation of Agenda 21 provisions related to combating drought and desertification and to land resource management. In this context, the experience gained could be used by all other countries affected by drought and desertification, in particular those in Africa, with special attention to countries most affected or classified as least developed countries.

5. Specialized agencies of the United Nations system and related organizations and other relevant intergovernmental organizations

38.28. All specialized agencies of the United Nations system, related organizations and other relevant intergovernmental organizations within their respective fields of competence have an important role to play in the implementation of relevant parts of Agenda 21 and other decisions of the Conference. Their governing bodies may consider ways of strengthening and adjusting activities and programmes in line with Agenda 21, in particular, regarding projects for promoting sustainable development. Furthermore, they may consider establishing special arrangements with donors and financial institutions for project implementation that may require additional resources.

I. Regional and subregional cooperation and implementation

38.29. Regional and subregional cooperation will be an important part of the outcome of the Conference. The regional commissions, regional development banks and regional economic and technical cooperation organizations, within their respective agreed mandates, can contribute to this process by:

a. Promoting regional and subregional capacity-building;

b. Promoting the integration of environmental concerns in regional and subregional development policies;

c. Promoting regional and subregional cooperation, where appropriate, regarding transboundary issues related to sustainable development.

38.30. The regional commissions, as appropriate, should play a leading role in coordinating regional and subregional activities by sectoral and other United Nations bodies and shall assist countries in achieving sustainable development. The commissions and regional programmes within the United Nations system, as well as other regional organizations, should review the need for modification of ongoing activities, as appropriate, in light of Agenda 21.

38.31. There must be active cooperation and collaboration among the regional commissions and other relevant organizations, regional development banks, non-governmental organizations and other institutions at the regional level. UNEP and UNDP, together with the regional commissions, would have a crucial role to play, especially in providing the necessary assistance, with particular emphasis on building and strengthening the national capacity of Member States.

38.32. There is a need for closer cooperation between UNEP and UNDP, together with other relevant institutions, in the implementation of projects to halt environmental degradation or its impact and to support training programmes in environmental planning and management for sustainable development at the regional level.

38.33. Regional intergovernmental technical and economic organizations have an important role to play in helping Governments to take coordinated action in solving environment issues of regional significance.

38.34. Regional and subregional organizations should play a major role in the implementation of the provisions of Agenda 21 related to combating drought and desertification. UNEP, UNDP and UNSO should assist and cooperate with those relevant organizations.

38.35. Cooperation between regional and subregional organizations and relevant organizations of the United Nations system should be encouraged, where appropriate, in other sectoral areas.

J. National implementation

38.36. States have an important role to play in the follow-up of the Conference and the implementation of Agenda 21. National level efforts should be undertaken by all countries in an integrated manner so that both environment and development concerns can be dealt with in a coherent manner.

38.37. Policy decisions and activities at the national level, tailored to support and implement Agenda 21, should be supported by the United Nations system upon request.

38.38. Furthermore, States could consider the preparation of national reports. In this context, the organs of the United Nations system should, upon request, assist countries, in particular developing countries. Countries could also consider the preparation of national action plans for the implementation of Agenda 21.

38.39. Existing assistance consortia, consultative groups and round tables should make greater efforts to integrate environmental considerations and related development objectives into their development assistance strategies and should consider reorienting and appropriately adjusting their memberships and operations to facilitate this process and better support national efforts to integrate environment and development.

38.40. States may wish to consider setting up a national coordination structure responsible for the follow-up of Agenda 21. Within this structure, which would benefit from the expertise of non-governmental organizations, submissions and other relevant information could be made to the United Nations.

K. Cooperation between United Nations bodies and international financial organizations

38.41. The success of the follow-up to the Conference is dependent upon an effective link between substantive action and financial support, and this requires close and effective cooperation between United Nations bodies and the multilateral financial organizations. The Secretary-General and heads of United Nations programmes, organizations and the multilateral financial organizations have a special responsibility in forging such cooperation, not only through the United Nations high-level coordination mechanism (Administrative Committee on Coordination) but also at regional and national levels. In particular, representatives of multilateral financial institutions and mechanisms, as well as IFAD, should actively be associated with deliberations of the intergovernmental structure responsible for the follow-up to Agenda 21.

L. Non-governmental organizations

38.42. Non-governmental organizations and major groups are important partners in the implementation of Agenda 21. Relevant non-governmental organizations, including the scientific community, the private sector and women's groups, should be given opportunities to make their contributions and establish appropriate relationships with the United Nations system. Support should be provided for developing countries' non-governmental organizations and their self-organized networks.

38.43. The United Nations system, including international finance and development agencies, and all intergovernmental organizations and forums should, in consultation with non-governmental organizations, take measures to:

a. Design open and effective means to achieve the participation of non-governmental organizations, including those related to major groups, in the process established to review and evaluate the implementation of Agenda 21 at all levels and promote their contribution to it;

b. Take into account the findings of review systems and evaluation processes of non-governmental organizations in relevant reports of the Secretary-General to the General Assembly and all pertinent United Nations agencies and intergovernmental organizations and forums concerning implementation of Agenda 21 in accordance with the review process.

38.44. Procedures should be established for an expanded role for non-governmental organizations, including those related to major groups, with accreditation based on the procedures used in the Conference. Such organizations should have access to reports and other information produced by the United Nations system. The General Assembly, at an early stage, should examine ways of enhancing the involvement of non-governmental organizations within the United Nations system in relation to the follow-up process of the Conference.

38.45. The Conference takes note of other institutional initiatives for the implementation of Agenda 21, such as the proposal to establish a non-governmental Earth Council and the proposal to appoint a guardian for future generations, as well as other initiatives taken by local governments and business sectors.

Agenda 21 – Chapter 39
INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS

Basis for action

39.1. The recognition that the following vital aspects of the universal, multilateral and bilateral treaty-making process should be taken into account:

a. The further development of international law on sustainable development, giving special attention to the delicate balance between environmental and developmental concerns;

b. The need to clarify and strengthen the relationship between existing international instruments or agreements in the field of environment and relevant social and economic agreements or instruments, taking into account the special needs of developing countries;

c. At the global level, the essential importance of the participation in and the contribution of all countries, including the developing countries, to treaty making in the field of international law on sustainable development. Many of the existing international legal instruments and agreements in the field of environment have been developed without adequate participation and contribution of developing countries, and thus may require review in order to reflect the concerns and interests of developing countries and to ensure a balanced governance of such instruments and agreements;

d. Developing countries should also be provided with technical assistance in their attempts to enhance their national legislative capabilities in the field of environmental law;

e. Future projects for the progressive development and codification of international law on sustainable development should take into account the ongoing work of the International Law Commission;

f. Any negotiations for the progressive development and codification of international law concerning sustainable development should, in general, be conducted on a universal basis, taking into account special circumstances in the various regions.

Objectives

39.2. The overall objective of the review and development of international environmental law should be to evaluate and to promote the efficacy of that law and to promote the integration of environment and development policies through effective international agreements or instruments taking into account both universal principles and the particular and differentiated needs and concerns of all countries.

39.3. Specific objectives are:

a. To identify and address difficulties which prevent some States, in particular developing countries, from participating in or duly implementing international agreements or instruments and, where appropriate, to review and revise them with the purposes of integrating environmental and developmental concerns and laying down a sound basis for the implementation of these agreements or instruments;

b. To set priorities for future law-making on sustainable development at the global, regional or subregional level, with a view to enhancing the efficacy of international law in this field through, in particular, the integration of environmental and developmental concerns;

c. To promote and support the effective participation of all countries concerned, in particular developing countries, in the negotiation, implementation, review and governance of international agreements or instruments, including appropriate provision of technical and financial assistance and other available mechanisms for this purpose, as well as the use of differential obligations where appropriate;

d. To promote, through the gradual development of universally and multilaterally negotiated agreements or instruments, international standards for the protection of the environment that take into account the different situations and capabilities of countries. States recognize that environmental policies should deal with the root causes of environmental degradation, thus preventing environmental measures from resulting in unnecessary restrictions to trade. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing international environmental problems should, as far as possible, be based on an international consensus. Domestic measures targeted to achieve certain environmental objectives may need trade measures to render them effective. Should trade policy measures be found necessary for the enforcement of environmental policies, certain principles and rules should apply. These could include, inter alia, the principle of non-discrimination; the principle that the trade measure chosen should be the least trade-restrictive necessary to achieve the objectives; an obligation to ensure transparency in the use of trade measures related to the environment and to provide adequate notification of national regulations; and the need to give consideration to the special conditions and development requirements of developing countries as they move towards internationally agreed environmental objectives;

e. To ensure the effective, full and prompt implementation of legally binding instruments and to facilitate timely review and adjustment of agreements or instruments by the parties concerned, taking into account the special needs and concerns of all countries, in particular developing countries;

f. To improve the effectiveness of institutions, mechanisms and procedures for the administration of agreements and instruments;

g. To identify and prevent actual or potential conflicts, particularly between environmental and social/economic agreements or instruments, with a view to ensuring that such agreements or instruments are consistent. Where conflicts arise they should be appropriately resolved;

h. To study and consider the broadening and strengthening of the capacity of mechanisms, inter alia, in the United Nations system, to facilitate, where appropriate and agreed to by the parties concerned, the identification, avoidance and settlement of international disputes in the field of sustainable development, duly taking into account existing bilateral and multilateral agreements for the settlement of such disputes.

Activities

39.4. Activities and means of implementation should be considered in the light of the above basis for action and objectives, without prejudice to the right of every State to put forward suggestions in this regard in the General Assembly. These suggestions could be reproduced in a separate compilation on sustainable development.

A. Review, assessment and fields of action in international law for sustainable development

39.5. While ensuring the effective participation of all countries concerned, Parties should at periodic intervals review and assess both the past performance and effectiveness of existing international agreements or instruments as well as the priorities for future law making on sustainable development. This may include an examination of the feasibility of elaborating general rights and obligations of States, as appropriate, in the field of sustainable development, as provided by General Assembly resolution 44/228. In certain cases, attention should be given to the possibility of taking into account varying circumstances through differential obligations or gradual application. As an option for carrying out this task, earlier UNEP practice may be followed whereby legal experts designated by

Governments could meet at suitable intervals, to be decided later, with a broader environmental and developmental perspective.

39.6. Measures in accordance with international law should be considered to address, in times of armed conflict, large-scale destruction of the environment that cannot be justified under international law. The General Assembly and its Sixth Committee are the appropriate forums to deal with this subject. The specific competence and role of the International Committee of the Red Cross should be taken into account.

39.7. In view of the vital necessity of ensuring safe and environmentally sound nuclear power, and in order to strengthen international cooperation in this field, efforts should be made to conclude the ongoing negotiations for a nuclear safety convention in the framework of the International Atomic Energy Agency.

B. Implementation mechanisms

39.8. The parties to international agreements should consider procedures and mechanisms to promote and review their effective, full and prompt implementation. To that effect, States could, inter alia:

a. Establish efficient and practical reporting systems on the effective, full and prompt implementation of international legal instruments;

b. Consider appropriate ways in which relevant international bodies, such as UNEP, might contribute towards the further development of such mechanisms.

C. Effective participation in international law making

39.9. In all these activities and others that may be pursued in the future, based on the above basis for action and objectives, the effective participation of all countries, in particular developing countries, should be ensured through appropriate provision of technical assistance and/or financial assistance. Developing countries should be given "headstart" support not only in their national efforts to implement international agreements or instruments, but also to participate effectively in the negotiation of new or revised agreements or instruments and in the actual international operation of such agreements or instruments. Support should include assistance in building up expertise in international law particularly in relation to sustainable development, and in assuring access to the necessary reference information and scientific/technical expertise.

D. Disputes in the field of sustainable development

39.10. In the area of avoidance and settlement of disputes, States should further study and consider methods to broaden and make more effective the range of techniques available at present, taking into account, among others, relevant experience under existing international agreements, instruments or institutions and, where appropriate, their implementing mechanisms such as modalities for dispute avoidance and settlement. This may include mechanisms and procedures for the exchange of data and information, notification and consultation regarding situations that might lead to disputes with other States in the field of sustainable development and for effective peaceful means of dispute settlement in accordance with the Charter of the United Nations, including, where appropriate, recourse to the International Court of Justice, and their inclusion in treaties relating to sustainable development.

Agenda 21 – Chapter 40
INFORMATION FOR DECISION-MAKING

40.1. In sustainable development, everyone is a user and provider of information considered in the broad sense. That includes data, information, appropriately packaged experience and knowledge. The need for information arises at all levels, from that of senior decision makers at the national and international levels to the grass-roots and individual levels. The following two programme areas need to be implemented to ensure that decisions are based increasingly on sound information:

a. Bridging the data gap;

b. Improving information availability.

PROGRAMME AREAS

A. Bridging the data gap

Basis for action

40.2. While considerable data already exist, as the various sectoral chapters of Agenda 21 indicate, more and different types of data need to be collected, at the local, provincial, national and intemational levels, indicating the status and trends of the planet's ecosystem, natural resource, pollution and socio-economic variables. The gap in the availability, quality, coherence, standardization and accessibility of data between the developed and the developing world has been increasing, seriously impairing the capacities of countries to make informed decisions concerning environment and development.

40.3. There is a general lack of capacity, particularly in developing countries, and in many areas at the international level, for the collection and assessment of data, for their transformation into useful information and for their dissemination. There is also need for improved coordination among environmental, demographic, social and developmental data and information activities.

40.4. Commonly used indicators such as the gross national product (GNP) and measurements of individual resource or pollution flows do not provide adequate indications of sustainability. Methods for assessing interactions between different sectoral environmental, demographic, social and developmental parameters are not sufficiently developed or applied. Indicators of sustainable development need to be developed to provide solid bases for decision-making at all levels and to contribute to a self-regulating sustainability of integrated environment and development systems.

Objectives

40.5. The following objectives are important:

a. To achieve more cost-effective and relevant data collection and assessment by better identification of users, in both the public and private sectors, and of their information needs at the local, provincial, national and international levels;

b. To strengthen local, provincial, national and international capacity to collect and use multisectoral information in decision-making processes and to enhance capacities to collect and analyse data and information for decision-making, particularly in developing countries;

c. To develop or strengthen local, provincial, national and international means of ensuring that planning for sustainable development in all sectors is based on timely, reliable and usable information;

d. To make relevant information accessible in the form and at the time required to facilitate its use. Activities

a. Development of indicators of sustainable development

40.6. Countries at the national level and international governmental and non-governmental organizations at the international level should develop the concept of indicators of sustainable development in order to identify such indicators. In order to promote the increasing use of some of those indicators in satellite accounts, and eventually in national accounts, the development of indicators needs to be pursued by the Statistical Office of the United Nations Secretariat, as it draws upon evolving experience in this regard.

b. Promotion of global use of indicators of sustainable development

40.7. Relevant organs and organizations of the United Nations system, in cooperation with other international governmental, intergovernmental and non-governmental organizations, should use a suitable set of sustainable development indicators and indicators related to areas outside of national jurisdiction, such as the high seas, the upper atmosphere and outer space. The organs and organizations of the United Nations system, in coordination with other relevant international organizations, could provide recommendations for harmonized development of indicators at the national, regional and global levels, and for incorporation of a suitable set of these indicators in common, regularly updated, and widely accessible reports and databases, for use at the international level, subject to national sovereignty considerations.

c. Improvement of data collection and use

40.8. Countries and, upon request, international organizations should carry out inventories of environmental, resource and developmental data, based on national/global priorities for the management of sustainable development. They should determine the gaps and organize activities to fill those gaps. Within the organs and organizations of the United Nations system and relevant international organizations, data-collection activities, including those of Earthwatch and World Weather Watch, need to be strengthened, especially in the areas of urban air, freshwater, land resources (including forests and rangelands), desertification, other habitats, soil degradation, biodiversity, the high seas and the upper atmosphere. Countries and international organizations should make use of new techniques of data collection, including satellite-based remote sensing. In addition to the strengthening of existing development-related data collection, special attention needs to be paid to such areas as demographic factors, urbanization, poverty, health and rights of access to resources, as well as special groups, including women, indigenous peoples, youth, children and the disabled, and their relationships with environment issues.

d. Improvement of methods of data assessment and analysis

40.9. Relevant international organizations should develop practical recommendations for coordinated, harmonized collection and assessment of data at the national and international levels. National and international data and information centres should set up continuous and accurate data-collection systems and make use of geographic information systems, expert systems, models and a variety of other techniques for the assessment and analysis of data. These steps will be particularly relevant, as large quantities of data from satellite sources will need to be processed in the future. Developed countries and international organizations, as well as the private sector, should cooperate, in particular with developing countries, upon request, to facilitate their acquiring these technologies and this know-how.

e. Establishment of a comprehensive information framework

40.10. Governments should consider undertaking the necessary institutional changes at the national level to achieve the integration of environmental and developmental information. At the international level, environmental assessment activities need to be strengthened and coordinated with efforts to assess development trends.

f. Strengthening of the capacity for traditional information

40.11. Countries, with the cooperation of international organizations, should establish supporting mechanisms to provide local communities and resource users with the information and know-how they need to manage their environment and resources sustainably, applying traditional and indigenous knowledge and approaches when appropriate. This is particularly relevant for rural and urban populations and indigenous, women's and youth groups.

Means of implementation

a. Financing and cost evaluation

40.12. The secretariat of the Conference has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.9 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

b. (b) Institutional means

40.13. Institutional capacity to integrate environment and development and to develop relevant indicators is lacking at both the national and international levels. Existing institutions and programmes such as the Global Environmental Monitoring System (GEMS) and the Global Resource Information Database (GRID) within UNEP and different entities within the systemwide Earthwatch will need to be considerably strengthened. Earthwatch has been an essential element for environment-related data. While programmes related to development data exist in a number of agencies, there is insufficient coordination between them. The activities related to development data of agencies and institutions of the United Nations system should be more effectively coordinated, perhaps through an equivalent and complementary "Development Watch", which with the existing Earthwatch should be coordinated through an appropriate office within the United Nations to ensure the full integration of environment and development concerns.

c. Scientific and technological means

d.

40.14. Regarding transfer of technology, with the rapid evolution of data-collection and information technologies it is necessary to develop guidelines and mechanisms for the rapid and continuous transfer of those technologies, particularly to developing countries, in conformity with chapter 34 (Transfer of environmentally sound technology, cooperation and capacity-building), and for the training of personnel in their utilization.

e. Human resource development

40.15. International cooperation for training in all areas and at all levels will be required, particularly in developing countries. That training will have to include technical training of those involved in data collection, assessment and transformation, as well as assistance to decision makers concerning how to use such information.

f. Capacity-building

40.16. All countries, particularly developing countries, with the support of international cooperation, should strengthen their capacity to collect, store, organize, assess and use data in decision-making more effectively.

B. Improving availability of information

Basis for action

40.17. There already exists a wealth of data and information that could be used for the management of sustainable development. Finding the appropriate information at the required time and at the relevant scale of aggregation is a difficult task.

40.18. Information within many countries is not adequately managed, because of shortages of financial resources and trained manpower, lack of awareness of the value and availability of such information and other immediate or pressing problems, especially in developing countries. Even where information is available, it may not be easily accessible, either because of the lack of technology for effective access or because of associated costs, especially for information held outside the country and available commercially.

Objectives

40.19. Existing national and international mechanisms of information processing and exchange, and of related technical assistance, should be strengthened to ensure effective and equitable availability of information generated at the local, provincial, national and international levels, subject to national sovereignty and relevant intellectual property rights.

40.20. National capacities should be strengthened, as should capacities within Governments, non-governmental organizations and the private sector, in information handling and communication, particularly within developing countries.

40.21. Full participation of, in particular, developing countries should be ensured in any international scheme under the organs and organizations of the United Nations system for the collection, analysis and use of data and information.

Activities

a. Production of information usable for decision-making

40.22. Countries and international organizations should review and strengthen information systems and services in sectors related to sustainable development, at the local, provincial, national and international levels. Special emphasis should be placed on the transformation of existing information into forms more useful for decision-making and on targeting information at different user groups. Mechanisms should be strengthened or established for transforming scientific and socio-economic assessments into information suitable for both planning and public information. Electronic and non-electronic formats should be used.

b. Establishment of standards and methods for handling information

40.23. Governments should consider supporting the efforts of governmental as well as non-governmental organizations to develop mechanisms for efficient and harmonized exchange of information at the local, national, provincial and international levels, including revision and establishment of data, access and dissemination formats, and communication interfaces.

c. Development of documentation about information

40.24. The organs and organizations of the United Nations system, as well as other governmental and non-governmental organizations, should document and share information about the sources of available information in their respective organizations. Existing programmes, such as those of the Advisory Committee for the Coordination of Information Systems (ACCIS) and the International Environmental Information System (INFOTERRA), should be reviewed and strengthened as required. Networking and coordinating mechanisms should be encouraged between the wide variety of other actors, including arrangements with non-governmental organizations for information sharing and donor activities for sharing information on sustainable development projects. The private sector should be encouraged to strengthen the mechanisms of sharing its experience and information on sustainable development.

d. Establishment and strengthening of electronic networking capabilities

40.25. Countries, international organizations, including organs and organizations of the United Nations system, and non-governmental organizations should exploit various initiatives for electronic links to support information sharing, to provide access to databases and other information sources, to facilitate communication for meeting broader objectives, such as the implementation of Agenda 21, to facilitate intergovernmental negotiations, to monitor conventions and efforts for sustainable development to transmit environmental alerts, and to transfer technical data. These organizations should also facilitate the linkage of different electronic networks and the use of appropriate standards and communication protocols for the transparent interchange of electronic communications. Where necessary, new technology should be developed and its use encouraged to permit participation of those not served at present by existing infrastructure and methods. Mechanisms should also be established to carry out the necessary transfer of information to and from non-electronic systems to ensure the involvement of those not able to participate in this way.

e. Making use of commercial information sources

40.26. Countries and international organizations should consider undertaking surveys of information available in the private sector on sustainable development and of present dissemination arrangements to determine gaps and how those gaps could be filled by commercial or quasi-commercial activity, particularly activities in and/or involving developing countries where feasible. Whenever economic or other constraints on supplying and accessing information arise, particularly in developing countries, innovative schemes for subsidizing such information-related access or removing the non-economic constraints should be considered.

Means of implementation

a. Financing and cost evaluation

40.27. The secretariat of the Conference has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $165 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

b. Institutional means

40.28. The institutional implications of this programme concern mostly the strengthening of already existing institutions, as well as the strengthening of cooperation with non-governmental organizations, and need to be consistent with the overall decisions on institutions made by the United Nations Conference on Environment and Development.

c. Capacity-building

40.29. Developed countries and relevant international organizations should cooperate, in particular with developing countries, to expand their capacity to receive, store and retrieve, contribute, disseminate, use and provide appropriate public access to relevant environmental and developmental information, by providing technology and training to establish local information services and by supporting partnership and cooperative arrangements between countries and on the regional or subregional level.

d. Scientific and technological means

40.30. Developed countries and relevant international organizations should support research and development in hardware, software and other aspects of information technology, in particular in developing countries, appropriate to their operations, national needs and environmental contexts.

A/CONF.151/26/Rev.1 (Vol. I)

Report of the United Nations Conference on Environment and Development

Rio de Janeiro, 3–14 June 1992

Volume I

Resolutions Adopted by the Conference

United Nations • New York, 1993

NOTE

Symbols of United Nations documents are composed of capital letters combined with figures.

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The *Report of the United Nations Conference on Environment and Development* is issued in three volumes:

Volume I:	Resolutions Adopted by the Conference
Volume II:	Proceedings of the Conference
Volume III:	Statements Made by Heads of State or Government at the Summit Segment of the Conference

A/CONF.151/26/Rev.1 (Vol. I)

United Nations publication
Sales No. E.93.I.8

ISBN 92-1-100498-5

CONTENTS

Page

Resolution 1. Adoption of texts on environment and development 2

Annexes

I. Rio Declaration on Environment and Development 3

II. Agenda 21 9

III. Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests 480

Resolution 2. Expression of thanks to the people and Government of Brazil 486

Resolution 3. Credentials of representatives to the Conference 486

ABBREVIATIONS

APELL	Awareness and Preparedness for Industrial Accidents at Local Level
CFC	chlorofluorocarbon
CGIAR	Consultative Group on International Agricultural Research
CILSS	Permanent Inter-State Committee on Drought Control in the Sahel
EEZ	exclusive economic zone
ECA	Economic Commission for Africa
ECE	Economic Commission for Europe
ECLAC	Economic Commission for Latin America and the Caribbean
ELCI	Environmental Liaison Centre International
EMINWA	environmentally sound management of inland water
ESCAP	Economic and Social Commission for Asia and the Pacific
ESCWA	Economic and Social Commission for Western Asia
FAO	Food and Agriculture Organization of the United Nations
GATT	General Agreement on Tariffs and Trade
GAW	Global Atmosphere Watch (WMO)
GEF	Global Environment Facility
GEMS	Global Environmental Monitoring System (UNEP)
GEMS/WATER	Global Water Quality Monitoring Programme
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Pollution
GIPME	Global Investigation of Pollution in the Marine Environment (UNESCO)
GIS	Geographical Information System
GLOBE	Global Legislators Organisation for a Balanced Environment
GOS	Global Observing System (WMO/WWW)
GRID	Global Resource Information Database
GSP	generalized system of preferences
HIV	human immunodeficiency virus
IAEA	International Atomic Energy Agency
IAP-WASAD	International Action Programme on Water and Sustainable Agricultural Development
IARC	International Agency for Research on Cancer
IBSRAM	International Board of Soil Resources and Management
ICCA	International Council of Chemical Associations
ICES	International Council for the Exploration of the Sea
ICPIC	International Cleaner Production Information Clearing House
ICSC	International Civil Service Commission
ICSU	International Council of Scientific Unions
IEEA	integrated environmental and economic accounting
IFAD	International Fund for Agricultural Development
IGADD	Intergovernmental Authority for Drought and Development
IGBP	International Geosphere-Biosphere Programme (ICSU)
IGBP/START	International Geosphere-Biosphere Programme/Global Change System for Analysis, Research and Training
ILO	International Labour Organisation
IMF	International Monetary Fund

IMO	International Maritime Organization
INFOTERRA	International Environment Information System (UNEP)
IOC	Intergovernmental Oceanographic Commission
IPCC	Intergovernmental Panel on Climate Change
IPCS	International Programme on Chemical Safety
IPM	integrated pest management
IRPTC	International Register of Potentially Toxic Chemicals
ITC	International Tin Council
ITTO	International Tropical Timber Organization
IUCN	International Union for Conservation of Nature and Natural Resources
MARPOL	International Convention for the Prevention of Pollution from Ships
OECD	Organisation for Economic Cooperation and Development
PGRFA	plant genetic resources for agriculture
PIC	prior informed consent procedure
SADCC	Southern African Development Coordination Conference
SARD	sustainable agriculture and rural development
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNDRO	Office of the United Nations Disaster Relief Coordinator
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNU	United Nations University
WCP	World Climate Programme (WMO/UNEP/ICSU/UNESCO)
WFC	World Food Council
WHO	World Health Organization
WMO	World Meteorological Organization
WWF	World Wild Fund for Nature (also called World Wildlife Fund)
WWW	World Weather Watch (WMO)

At its 19th plenary meeting, on 14 June 1992, the Conference adopted the Rio Declaration on Environment and Development, Agenda 21 and the Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests (resolution 1). It also adopted a resolution expressing thanks to the people and Government of Brazil (resolution 2) and a resolution concerning the credentials of representatives to the Conference (resolution 3).

RESOLUTION 1

Adoption of texts on environment and development

The United Nations Conference on Environment and Development,

Having met at Rio de Janeiro from 3 to 14 June 1992,

1. Notes that the United Nations Framework Convention on Climate Change and the Convention on Biological Diversity were opened for signature at the United Nations Conference on Environment and Development and were signed at Rio de Janeiro by 154 States and one regional economic integration organization and 156 States and one regional economic integration organization respectively;

2. Adopts the Rio Declaration on Environment and Development, Agenda 21 and the Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests, which are annexed to the present resolution;

3. Recommends to the General Assembly of the United Nations at its forty-seventh session that it endorse the texts referred to in paragraph 2 above, as adopted.

Annex I

RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT

The United Nations Conference on Environment and Development,

Having met at Rio de Janeiro from 3 to 14 June 1992,

Reaffirming the Declaration of the United Nations Conference on the Human Environment, adopted at Stockholm on 16 June 1972, [a/] and seeking to build upon it,

With the goal of establishing a new and equitable global partnership through the creation of new levels of cooperation among States, key sectors of societies and people,

Working towards international agreements which respect the interests of all and protect the integrity of the global environmental and developmental system,

Recognizing the integral and interdependent nature of the Earth, our home,

Proclaims that:

Principle 1

Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.

Principle 2

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Principle 3

The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.

[a/] Report of the United Nations Conference on the Human Environment, Stockholm, 5-16 June 1972 (United Nations publication, Sales No. E.73.II.A.14 and corrigendum), chap. I.

Principle 4

In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.

Principle 5

All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world.

Principle 6

The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries.

Principle 7

States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.

Principle 8

To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.

Principle 9

States should cooperate to strengthen endogenous capacity-building for sustainable development by improving scientific understanding through exchanges of scientific and technological knowledge, and by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies.

Principle 10

Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

Principle 11

States shall enact effective environmental legislation. Environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply. Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries.

Principle 12

States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing transboundary or global environmental problems should, as far as possible, be based on an international consensus.

Principle 13

States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.

Principle 14

States should effectively cooperate to discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health.

Principle 15

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

Principle 16

National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

Principle 17

Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.

Principle 18

States shall immediately notify other States of any natural disasters or other emergencies that are likely to produce sudden harmful effects on the environment of those States. Every effort shall be made by the international community to help States so afflicted.

Principle 19

States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect and shall consult with those States at an early stage and in good faith.

Principle 20

Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development.

Principle 21

The creativity, ideals and courage of the youth of the world should be mobilized to forge a global partnership in order to achieve sustainable development and ensure a better future for all.

Principle 22

Indigenous people and their communities and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.

Principle 23

The environment and natural resources of people under oppression, domination and occupation shall be protected.

Principle 24

Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary.

Principle 25

Peace, development and environmental protection are interdependent and indivisible.

Principle 26

States shall resolve all their environmental disputes peacefully and by appropriate means in accordance with the Charter of the United Nations.

Principle 27

States and people shall cooperate in good faith and in a spirit of partnership in the fulfilment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development.

Annex II

AGENDA 21

CONTENTS

Chapter | Paragraphs | Page

1. Preamble .... 1.1 - 1.6 | 12

SECTION I. SOCIAL AND ECONOMIC DIMENSIONS

2. International cooperation to accelerate sustainable development in developing countries and related domestic policies .... 2.1 - 2.43 | 14

3. Combating poverty .... 3.1 - 3.12 | 28

4. Changing consumption patterns .... 4.1 - 4.27 | 34

5. Demographic dynamics and sustainability .... 5.1 - 5.66 | 40

6. Protecting and promoting human health .... 6.1 - 6.46 | 51

7. Promoting sustainable human settlement development .. 7.1 - 7.80 | 70

8. Integrating environment and development in decision-making .... 8.1 - 8.54 | 95

SECTION II. CONSERVATION AND MANAGEMENT OF RESOURCES FOR DEVELOPMENT

9. Protection of the atmosphere .... 9.1 - 9.35 | 111

10. Integrated approach to the planning and management of land resources .... 10.1 - 10.18 | 124

11. Combating deforestation .... 11.1 - 11.40 | 131

12. Managing fragile ecosystems: combating desertification and drought .... 12.1 - 12.63 | 149

13. Managing fragile ecosystems: sustainable mountain development .... 13.1 - 13.24 | 169

14. Promoting sustainable agriculture and rural development .... 14.1 - 14.104 | 178

15. Conservation of biological diversity .... 15.1 - 15.11 | 210

16. Environmentally sound management of biotechnology ... 16.1 - 16.46 | 218

CONTENTS (continued)

Chapter		Paragraphs	Page
17.	Protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources	17.1 - 17.137	238
18.	Protection of the quality and supply of freshwater resources: application of integrated approaches to the development, management and use of water resources	18.1 - 18.90	275
19.	Environmentally sound management of toxic chemicals, including prevention of illegal international traffic in toxic and dangerous products	19.1 - 19.76	315
20.	Environmentally sound management of hazardous wastes, including prevention of illegal international traffic in hazardous wastes	20.1 - 20.46	335
21.	Environmentally sound management of solid wastes and sewage-related issues	21.1 - 21.49	353
22.	Safe and environmentally sound management of radioactive wastes	22.1 - 22.9	370

SECTION III. STRENGTHENING THE ROLE OF MAJOR GROUPS

Chapter		Paragraphs	Page
23.	Preamble	23.1 - 23.4	373
24.	Global action for women towards sustainable and equitable development	24.1 - 24.12	374
25.	Children and youth in sustainable development	25.1 - 25.17	380
26.	Recognizing and strengthening the role of indigenous people and their communities	26.1 - 26.9	385
27.	Strengthening the role of non-governmental organizations: partners for sustainable development	27.1 - 27.13	389
28.	Local authorities' initiatives in support of Agenda 21	28.1 - 28.7	393
29.	Strengthening the role of workers and their trade unions	29.1 - 29.14	395
30.	Strengthening the role of business and industry	30.1 - 30.30	398
31.	Scientific and technological community	31.1 - 31.12	403
32.	Strengthening the role of farmers	32.1 - 32.14	408

CONTENTS (continued)

Chapter Paragraphs Page

SECTION IV. MEANS OF IMPLEMENTATION

33. Financial resources and mechanisms .... 33.1 - 33.21 412

34. Transfer of environmentally sound technology, cooperation and capacity-building .... 34.1 - 34.29 418

35. Science for sustainable development .... 35.1 - 35.25 426

36. Promoting education, public awareness and training .. 36.1 - 36.27 439

37. National mechanisms and international cooperation for capacity-building in developing countries .... 37.1 - 37.13 450

38. International institutional arrangements .... 38.1 - 38.45 456

39. International legal instruments and mechanisms ...... 39.1 - 39.10 469

40. Information for decision-making .... 40.1 - 40.30 473

Chapter 1

PREAMBLE*

1.1. Humanity stands at a defining moment in history. We are confronted with a perpetuation of disparities between and within nations, a worsening of poverty, hunger, ill health and illiteracy, and the continuing deterioration of the ecosystems on which we depend for our well-being. However, integration of environment and development concerns and greater attention to them will lead to the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future. No nation can achieve this on its own; but together we can - in a global partnership for sustainable development.

1.2. This global partnership must build on the premises of General Assembly resolution 44/228 of 22 December 1989, which was adopted when the nations of the world called for the United Nations Conference on Environment and Development, and on the acceptance of the need to take a balanced and integrated approach to environnment and development questions.

1.3. Agenda 21 addresses the pressing problems of today and also aims at preparing the world for the challenges of the next century. It reflects a global consensus and political commitment at the highest level on development and environment cooperation. Its successful implementation is first and foremost the responsibility of Governments. National strategies, plans, policies and processes are crucial in achieving this. International cooperation should support and supplement such national efforts. In this context, the United Nations system has a key role to play. Other international, regional and subregional organizations are also called upon to contribute to this effort. The broadest public participation and the active involvement of the non-governmental organizations and other groups should also be encouraged.

1.4. The developmental and environmental objectives of Agenda 21 will require a substantial flow of new and additional financial resources to developing countries, in order to cover the incremental costs for the actions they have to undertake to deal with global environmental problems and to accelerate sustainable development. Financial resources are also required for strengthening the capacity of international institutions for the implementation of Agenda 21. An indicative order-of-magnitude assessment of costs is included in each of the programme areas. This assessment will need to be examined and refined by the relevant implementing agencies and organizations.

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* When the term "Governments" is used, it will be deemed to include the European Economic Community within its areas of competence. Throughout Agenda 21 the term "environmentally sound" means "environmentally safe and sound", in particular when applied to the terms "energy sources", "energy supplies", "energy systems" and "technology" or "technologies".

1.5. In the implementation of the relevant programme areas identified in Agenda 21, special attention should be given to the particular circumstances facing the economies in transition. It must also be recognized that these countries are facing unprecedented challenges in transforming their economies, in some cases in the midst of considerable social and political tension.

1.6. The programme areas that constitute Agenda 21 are described in terms of the basis for action, objectives, activities and means of implementation. Agenda 21 is a dynamic programme. It will be carried out by the various actors according to the different situations, capacities and priorities of countries and regions in full respect of all the principles contained in the Rio Declaration on Environment and Development. It could evolve over time in the light of changing needs and circumstances. This process marks the beginning of a new global partnership for sustainable development.

SECTION I. SOCIAL AND ECONOMIC DIMENSIONS

Chapter 2

INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC POLICIES

INTRODUCTION

2.1. In order to meet the challenges of environment and development, States have decided to establish a new global partnership. This partnership commits all States to engage in a continuous and constructive dialogue, inspired by the need to achieve a more efficient and equitable world economy, keeping in view the increasing interdependence of the community of nations and that sustainable development should become a priority item on the agenda of the international community. It is recognized that, for the success of this new partnership, it is important to overcome confrontation and to foster a climate of genuine cooperation and solidarity. It is equally important to strengthen national and international policies and multinational cooperation to adapt to the new realities.

2.2. Economic policies of individual countries and international economic relations both have great relevance to sustainable development. The reactivation and acceleration of development requires both a dynamic and a supportive international economic environment and determined policies at the national level. It will be frustrated in the absence of either of these requirements. A supportive external economic environment is crucial. The development process will not gather momentum if the global economy lacks dynamism and stability and is beset with uncertainties. Neither will it gather momentum if the developing countries are weighted down by external indebtedness, if development finance is inadequate, if barriers restrict access to markets and if commodity prices and the terms of trade of developing countries remain depressed. The record of the 1980s was essentially negative on each of these counts and needs to be reversed. The policies and measures needed to create an international environment that is strongly supportive of national development efforts are thus vital. International cooperation in this area should be designed to complement and support - not to diminish or subsume - sound domestic economic policies, in both developed and developing countries, if global progress towards sustainable development is to be achieved.

2.3. The international economy should provide a supportive international climate for achieving environment and development goals by:

(a) Promoting sustainable development through trade liberalization;

(b) Making trade and environment mutually supportive;

(c) Providing adequate financial resources to developing countries and dealing with international debt;

(d) Encouraging macroeconomic policies conducive to environment and development.

2.4. Governments recognize that there is a new global effort to relate the elements of the international economic system and mankind's need for a safe and stable natural environment. Therefore, it is the intent of Governments that consensus-building at the intersection of the environmental and trade and development areas will be ongoing in existing international forums, as well as in the domestic policy of each country.

PROGRAMME AREAS

A. Promoting sustainable development through trade

Basis for action

2.5. An open, equitable, secure, non-discriminatory and predictable multilateral trading system that is consistent with the goals of sustainable development and leads to the optimal distribution of global production in accordance with comparative advantage is of benefit to all trading partners. Moreover, improved market access for developing countries' exports in conjunction with sound macroeconomic and environmental policies would have a positive environmental impact and therefore make an important contribution towards sustainable development.

2.6. Experience has shown that sustainable development requires a commitment to sound economic policies and management, an effective and predictable public administration, the integration of environmental concerns into decision-making and progress towards democratic government, in the light of country-specific conditions, which allows for full participation of all parties concerned. These attributes are essential for the fulfilment of the policy directions and objectives listed below.

2.7. The commodity sector dominates the economies of many developing countries in terms of production, employment and export earnings. An important feature of the world commodity economy in the 1980s was the prevalence of very low and declining real prices for most commodities in international markets and a resulting substantial contraction in commodity export earnings for many producing countries. The ability of those countries to mobilize, through international trade, the resources needed to finance investments required for sustainable development may be impaired by this development and by tariff and non-tariff impediments, including tariff escalation, limiting their access to export markets. The removal of existing distortions in international trade is essential. In particular, the achievement of this objective requires that there be substantial and progressive reduction in the support and protection of agriculture - covering internal regimes, market access and export subsidies - as well as of industry and other sectors, in order to avoid inflicting large losses on the more efficient producers, especially in developing countries. Thus, in agriculture, industry and other sectors, there is scope for initiatives aimed at trade liberalization and at policies to make production more responsive to environment and development needs. Trade liberalization should therefore be pursued on a global basis across economic sectors so as to contribute to sustainable development.

2.8. The international trading environment has been affected by a number of developments that have created new challenges and opportunities and have made multilateral economic cooperation of even greater importance. World trade has continued to grow faster than world output in recent years. However, the expansion of world trade has been unevenly spread, and only a limited number of developing countries have been capable of achieving appreciable growth in their exports. Protectionist pressures and unilateral policy actions continue to endanger the functioning of an open multilateral trading system, affecting particularly the export interests of developing countries. Economic integration processes have intensified in recent years and should impart dynamism to global trade and enhance the trade and development possibilities for developing countries. In recent years, a growing number of these countries have adopted courageous policy reforms involving ambitious autonomous trade liberalization, while far-reaching reforms and profound restructuring processes are taking place in Central and Eastern European countries, paving the way for their integration into the world economy and the international trading system. Increased attention is being devoted to enhancing the role of enterprises and promoting competitive markets through adoption of competitive policies. The GSP has proved to be a useful trade policy instrument, although its objectives will have to be fulfilled, and trade facilitation strategies relating to electronic data interchange (EDI) have been effective in improving the trading efficiency of the public and private sectors. The interactions between environment policies and trade issues are manifold and have not yet been fully assessed. An early, balanced, comprehensive and successful outcome of the Uruguay Round of multilateral trade negotiations would bring about further liberalization and expansion of world trade, enhance the trade and development possibilities of developing countries and provide greater security and predictability to the international trading system.

Objectives

2.9. In the years ahead, and taking into account the results of the Uruguay Round of multilateral trade negotiations, Governments should continue to strive to meet the following objectives:

(a) To promote an open, non-discriminatory and equitable multilateral trading system that will enable all countries - in particular, the developing countries - to improve their economic structures and improve the standard of living of their populations through sustained economic development;

(b) To improve access to markets for exports of developing countries;

(c) To improve the functioning of commodity markets and achieve sound, compatible and consistent commodity policies at national and international levels with a view to optimizing the contribution of the commodity sector to sustainable development, taking into account environmental considerations;

(d) To promote and support policies, domestic and international, that make economic growth and environmental protection mutually supportive.

Activities

(a) International and regional cooperation and coordination

Promoting an international trading system that takes account of the needs of developing countries

2.10. Accordingly, the international community should:

(a) Halt and reverse protectionism in order to bring about further liberalization and expansion of world trade, to the benefit of all countries, in particular the developing countries;

(b) Provide for an equitable, secure, non-discriminatory and predictable international trading system;

(c) Facilitate, in a timely way, the integration of all countries into the world economy and the international trading system;

(d) Ensure that environment and trade policies are mutually supportive, with a view to achieving sustainable development;

(e) Strengthen the international trade policies system through an early, balanced, comprehensive and successful outcome of the Uruguay Round of multilateral trade negotiations.

2.11. The international community should aim at finding ways and means of achieving a better functioning and enhanced transparency of commodity markets, greater diversification of the commodity sector in developing economies within a macroeconomic framework that takes into consideration a country's economic structure, resource endowments and market opportunities, and better management of natural resources that takes into account the necessities of sustainable development.

2.12. Therefore, all countries should implement previous commitments to halt and reverse protectionism and further expand market access, particularly in areas of interest to developing countries. This improvement of market access will be facilitated by appropriate structural adjustment in developed countries. Developing countries should continue the trade-policy reforms and structural adjustment they have undertaken. It is thus urgent to achieve an improvement in market access conditions for commodities, notably through the progressive removal of barriers that restrict imports, particularly from developing countries, of commodity products in primary and processed forms, as well as the substantial and progressive reduction of types of support that induce uncompetitive production, such as production and export subsidies.

(b) Management-related activities

Developing domestic policies that maximize the benefits of trade liberalization for sustainable development

2.13. For developing countries to benefit from the liberalization of trading systems, they should implement the following policies, as appropriate:

(a) Create a domestic environment supportive of an optimal balance between production for the domestic and export markets and remove biases against exports and discourage inefficient import-substitution;

(b) Promote the policy framework and the infrastructure required to improve the efficiency of export and import trade as well as the functioning of domestic markets.

2.14. The following policies should be adopted by developing countries with respect to commodities consistent with market efficiency:

(a) Expand processing, distribution and improve marketing practices and the competitiveness of the commodity sector;

(b) Diversify in order to reduce dependence on commodity exports;

(c) Reflect efficient and sustainable use of factors of production in the formation of commodity prices, including the reflection of environmental, social and resources costs.

(c) Data and information

Encouraging data collection and research

2.15. GATT, UNCTAD and other relevant institutions should continue to collect appropriate trade data and information. The Secretary-General of the United Nations is requested to strengthen the Trade Control Measures Information System managed by UNCTAD.

Improving international cooperation in commodity trade and the diversification of the sector

2.16. With regard to commodity trade, Governments should, directly or through appropriate international organizations, where appropriate:

(a) Seek optimal functioning of commodity markets, inter alia, through improved market transparency involving exchanges of views and information on investment plans, prospects and markets for individual commodities. Substantive negotiations between producers and consumers should be pursued with a view to achieving viable and more efficient international agreements that take into account market trends, or arrangements, as well as study groups. In this regard, particular attention should be paid to the agreements on cocoa, coffee, sugar and tropical timber. The importance of international commodity agreements and arrangements is underlined. Occupational health and safety matters, technology transfer and services associated with the production, marketing and promotion of commodities, as well as environmental considerations, should be taken into account;

(b) Continue to apply compensation mechanisms for shortfalls in commodity export earnings of developing countries in order to encourage diversification efforts;

(c) Provide assistance to developing countries upon request in the design and implementation of commodity policies and the gathering and utilization of information on commodity markets;

(d) Support the efforts of developing countries to promote the policy framework and infrastructure required to improve the efficiency of export and import trade;

(e) Support the diversification initiatives of the developing countries at the national, regional and international levels.

Means of implementation

(a) Financing and cost evaluation

2.17. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities in this programme area to be about $8.8 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Capacity-building

2.18. The above-mentioned technical cooperation activities aim at strengthening national capabilities for design and implementation of commodity policy, use and management of national resources and the gathering and utilization of information on commodity markets.

B. Making trade and environment mutually supportive

Basis for action

2.19. Environment and trade policies should be mutually supportive. An open, multilateral trading system makes possible a more efficient allocation and use of resources and thereby contributes to an increase in production and incomes and to lessening demands on the environment. It thus provides additional resources needed for economic growth and development and improved environmental protection. A sound environment, on the other hand, provides the ecological and other resources needed to sustain growth and underpin a continuing expansion of trade. An open, multilateral trading system, supported by the adoption of sound environmental policies, would have a positive impact on the environment and contribute to sustainable development.

2.20. International cooperation in the environmental field is growing, and in a number of cases trade provisions in multilateral environment agreements have played a role in tackling global environmental challenges. Trade measures have thus been used in certain specific instances, where considered necessary, to enhance the effectiveness of environmental regulations for the protection of the environment. Such regulations should address the root causes of environmental degradation so as not to result in unjustified restrictions on trade. The challenge is to ensure that trade and environment policies are consistent and reinforce the process of sustainable development. However, account should be taken of the fact that environmental standards valid for developed countries may have unwarranted social and economic costs in developing countries.

Objectives

2.21. Governments should strive to meet the following objectives, through relevant multilateral forums, including GATT, UNCTAD and other international organizations:

(a) To make international trade and environment policies mutually supportive in favour of sustainable development;

(b) To clarify the role of GATT, UNCTAD and other international organizations in dealing with trade and environment-related issues, including, where relevant, conciliation procedure and dispute settlement;

(c) To encourage international productivity and competitiveness and encourage a constructive role on the part of industry in dealing with environment and development issues.

Activities

Developing an environment/trade and development agenda

2.22. Governments should encourage GATT, UNCTAD and other relevant international and regional economic institutions to examine, in accordance with their respective mandates and competences, the following propositions and principles:

(a) Elaborate adequate studies for the better understanding of the relationship between trade and environment for the promotion of sustainable development;

(b) Promote a dialogue between trade, development and environment communities;

(c) In those cases when trade measures related to environment are used, ensure transparency and compatibility with international obligations;

(d) Deal with the root causes of environment and development problems in a manner that avoids the adoption of environmental measures resulting in unjustified restrictions on trade;

(e) Seek to avoid the use of trade restrictions or distortions as a means to offset differences in cost arising from differences in environmental standards and regulations, since their application could lead to trade distortions and increase protectionist tendencies;

(f) Ensure that environment-related regulations or standards, including those related to health and safety standards, do not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on trade;

(g) Ensure that special factors affecting environment and trade policies in the developing countries are borne in mind in the application of environmental standards, as well as in the use of any trade measures. It is worth noting that standards that are valid in the most advanced countries may be inappropriate and of unwarranted social cost for the developing countries;

(h) Encourage participation of developing countries in multilateral agreements through such mechanisms as special transitional rules;

(i) Avoid unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country. Environmental measures addressing transborder or global environmental problems should, as far as possible, be based on an international consensus. Domestic measures targeted to achieve certain environmental objectives may need trade measures to render them effective. Should trade policy measures be found necessary for the enforcement of environmental policies, certain principles and rules should apply. These could include, *inter alia*, the principle of non-discrimination; the principle that the trade measure chosen should be the least trade-restrictive necessary to achieve the objectives; an obligation to ensure transparency in the use of trade measures related to the environment and to provide adequate notification of national regulations; and the need to give consideration to the special conditions and developmental requirements of developing countries as they move towards internationally agreed environmental objectives;

(j) Develop more precision, where necessary, and clarify the relationship between GATT provisions and some of the multilateral measures adopted in the environment area;

(k) Ensure public input in the formation, negotiation and implementation of trade policies as a means of fostering increased transparency in the light of country-specific conditions;

(l) Ensure that environmental policies provide the appropriate legal and institutional framework to respond to new needs for the protection of the environment that may result from changes in production and trade specialization.

C. Providing adequate financial resources to developing countries

Basis for action

2.23. Investment is critical to the ability of developing countries to achieve needed economic growth to improve the welfare of their populations and to meet their basic needs in a sustainable manner, all without deteriorating or depleting the resource base that underpins development. Sustainable development requires increased investment, for which domestic and external financial resources are needed. Foreign private investment and the return of flight capital, which depend on a healthy investment climate, are an important source of financial resources. Many developing countries have experienced a decade-long situation of negative net transfer of financial resources, during which their financial receipts were exceeded by payments they had to make, in particular for debt-servicing. As a result, domestically mobilized resources had to be transferred abroad instead of being invested locally in order to promote sustainable economic development.

2.24. For many developing countries, the reactivation of development will not take place without an early and durable solution to the problems of external indebtedness, taking into account the fact that, for many developing countries, external debt burdens are a significant problem. The burden of debt-service payments on those countries has imposed severe constraints on their ability to accelerate growth and eradicate poverty and has led to a contraction in imports, investment and consumption. External indebtedness has emerged as a main factor in the economic stalemate in the developing countries. Continued vigorous implementation of the evolving international debt strategy is aimed at restoring debtor countries' external financial viability, and the resumption of their growth and development would assist in achieving sustainable growth and development. In this context, additional financial resources in favour of developing countries and the efficient utilization of such resources are essential.

Objectives

2.25. The specific requirements for the implementation of the sectoral and cross-sectoral programmes included in Agenda 21 are dealt with in the relevant programme areas and in chapter 33 (Financial resources and mechanisms).

Activities

(a) Meeting international targets of official development assistance funding

2.26. As discussed in chapter 33, new and additional resources should be provided to support Agenda 21 programmes.

(b) Addressing the debt issue

2.27. In regard to the external debt incurred with commercial banks, the progress being made under the strengthened debt strategy is recognized and a more rapid implementation of this strategy is encouraged. Some countries have already benefited from the combination of sound adjustment policies and commercial bank debt reduction or equivalent measures. The international community encourages:

(a) Other countries with heavy debts to banks to negotiate similar commercial bank debt reduction with their creditors;

(b) The parties to such a negotiation to take due account of both the medium-term debt reduction and new money requirements of the debtor country;

(c) Multilateral institutions actively engaged in the strengthened international debt strategy to continue to support debt-reduction packages related to commercial bank debt with a view to ensuring that the magnitude of such financing is consonant with the evolving debt strategy;

(d) Creditor banks to participate in debt and debt-service reduction;

(e) Strengthened policies to attract direct investment, avoid unsustainable levels of debt and foster the return of flight capital.

2.28. With regard to debt owed to official bilateral creditors, the recent measures taken by the Paris Club with regard to more generous terms of relief to the poorest most indebted countries are welcomed. Ongoing efforts to implement these "Trinidad terms" measures in a manner commensurate with the payments capacity of those countries and in a way that gives additional support to their economic reform efforts are welcomed. The substantial bilateral debt reduction undertaken by some creditor countries is also welcomed, and others which are in a position to do so are encouraged to take similar action.

2.29. The actions of low-income countries with substantial debt burdens which continue, at great cost, to service their debt and safeguard their creditworthiness are commended. Particular attention should be paid to their resource needs. Other debt-distressed developing countries which are making great efforts to continue to service their debt and meet their external financial obligations also deserve due attention.

2.30. In connection with multilateral debt, it is urged that serious attention be given to continuing to work towards growth-oriented solutions to the problem of developing countries with serious debt-servicing problems, including those whose debt is mainly to official creditors or to multilateral financial institutions. Particularly in the case of low-income countries in the process of economic reform, the support of the multilateral financial institutions in the form of new disbursements and the use of their concessional funds is welcomed. The use of support groups should be continued in providing resources to clear arrears of countries embarking upon vigorous economic reform programmes supported by IMF and the World Bank. Measures by the multilateral financial institutions such as the refinancing of interest on non-concessional loans with IDA reflows - "fifth dimension" - are noted with appreciation.

Means of implementation

Financing and cost evaluation*

D. Encouraging economic policies conducive to sustainable development

Basis for action

2.31. The unfavourable external environment facing developing countries makes domestic resource mobilization and efficient allocation and utilization of domestically mobilized resources all the more important for the promotion of sustainable development. In a number of countries, policies are necessary to correct misdirected public spending, large budget deficits and other macroeconomic imbalances, restrictive policies and distortions in the areas of exchange rates, investment and finance, and obstacles to entrepreneurship. In developed countries, continuing policy reform and adjustment, including appropriate savings rates, would help generate resources to support the transition to sustainable development both domestically and in developing countries.

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* See chapter 33 (Financial resources and mechanisms).

2.32. Good management that fosters the association of effective, efficient, honest, equitable and accountable public administration with individual rights and opportunities is an essential element for sustainable, broadly based development and sound economic performance at all development levels. All countries should increase their efforts to eradicate mismanagement of public and private affairs, including corruption, taking into account the factors responsible for, and agents involved in, this phenomenon.

2.33. Many indebted developing countries are undergoing structural adjustment programmes relating to debt rescheduling or new loans. While such programmes are necessary for improving the balance in fiscal budgets and balance-of-payments accounts, in some cases they have resulted in adverse social and environmental effects, such as cuts in allocations for health care, education and environmental protection. It is important to ensure that structural adjustment programmes do not have negative impacts on the environment and social development so that such programmes can be more in line with the objectives of sustainable development.

Objectives

2.34. It is necessary to establish, in the light of the country-specific conditions, economic policy reforms that promote the efficient planning and utilization of resources for sustainable development through sound economic and social policies, foster entrepreneurship and the incorporation of social and environmental costs in resource pricing, and remove sources of distortion in the area of trade and investment.

Activities

(a) Management-related activities

Promoting sound economic policies

2.35. The industrialized countries and other countries in a position to do so should strengthen their efforts:

(a) To encourage a stable and predictable international economic environment, particularly with regard to monetary stability, real rates of interest and fluctuations in key exchange rates;

(b) To stimulate savings and reduce fiscal deficits;

(c) To ensure that the processes of policy coordination take into account the interests and concerns of the developing countries, including the need to promote positive action to support the efforts of the least developed countries to halt their marginalization in the world economy;

(d) To undertake appropriate national macroeconomic and structural policies aimed at promoting non-inflationary growth, narrowing their major external imbalances and increasing the adjustment capacity of their economies.

2.36. Developing countries should consider strengthening their efforts to implement sound economic policies:

(a) That maintain the monetary and fiscal discipline required to promote price stability and external balance;

(b) That result in realistic exchange rates;

(c) That raise domestic savings and investment, as well as improve returns to investment.

2.37. More specifically, all countries should develop policies that improve efficiency in the allocation of resources and take full advantage of the opportunities offered by the changing global economic environment. In particular, wherever appropriate, and taking into account national strategies and objectives, countries should:

(a) Remove the barriers to progress caused by bureaucratic inefficiencies, administrative strains, unnecessary controls and the neglect of market conditions;

(b) Promote transparency in administration and decision-making;

(c) Encourage the private sector and foster entrepreneurship by improving institutional facilities for enterprise creation and market entry. The essential objective would be to simplify or remove the restrictions, regulations and formalities that make it more complicated, costly and time-consuming to set up and operate enterprises in many developing countries;

(d) Promote and support the investment and infrastructure required for sustainable economic growth and diversification on an environmentally sound and sustainable basis;

(e) Provide scope for appropriate economic instruments, including market mechanisms, in harmony with the objectives of sustainable development and fulfilment of basic needs;

(f) Promote the operation of effective tax systems and financial sectors;

(g) Provide opportunities for small-scale enterprises, both farm and non-farm, and for the indigenous population and local communities to contribute fully to the attainment of sustainable development;

(h) Remove biases against exports and in favour of inefficient import substitution and establish policies that allow them to benefit fully from the flows of foreign investment, within the framework of national, social, economic and developmental goals;

(i) Promote the creation of a domestic economic environment supportive of an optimal balance between production for the domestic and export markets.

(b) International and regional cooperation and coordination

2.38. Governments of developed countries and those of other countries in a position to do so should, directly or through appropriate international and regional organizations and international lending institutions, enhance their efforts to provide developing countries with increased technical assistance for the following:

(a) Capacity-building in the nation's design and implementation of economic policies, upon request;

(b) Design and operation of efficient tax systems, accounting systems and financial sectors;

(c) Promotion of entrepreneurship.

2.39. International financial and development institutions should further review their policies and programmes in the light of the objective of sustainable development.

2.40. Stronger economic cooperation among developing countries has long been accepted as an important component of efforts to promote economic growth and technological capabilities and to accelerate development in the developing world. Therefore, the efforts of the developing countries to promote economic cooperation among themselves should be enhanced and continue to be supported by the international community.

Means of implementation

(a) Financing and cost evaluation

2.41. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities in this programme area to be about $50 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Capacity-building

2.42. The above-mentioned policy changes in developing countries involve substantial national efforts for capacity-building in the areas of public administration, central banking, tax administration, savings institutions and financial markets.

2.43. Particular efforts in the implementation of the four programme areas identified in this chapter are warranted in view of the especially acute environmental and developmental problems of the least developed countries.

Chapter 3

COMBATING POVERTY

PROGRAMME AREA

Enabling the poor to achieve sustainable livelihoods

Basis for action

3.1. Poverty is a complex multidimensional problem with origins in both the national and international domains. No uniform solution can be found for global application. Rather, country-specific programmes to tackle poverty and international efforts supporting national efforts, as well as the parallel process of creating a supportive international environment, are crucial for a solution to this problem. The eradication of poverty and hunger, greater equity in income distribution and human resource development remain major challenges everywhere. The struggle against poverty is the shared responsibility of all countries.

3.2. While managing resources sustainably, an environmental policy that focuses mainly on the conservation and protection of resources must take due account of those who depend on the resources for their livelihoods. Otherwise it could have an adverse impact both on poverty and on chances for long-term success in resource and environmental conservation. Equally, a development policy that focuses mainly on increasing the production of goods without addressing the sustainability of the resources on which production is based will sooner or later run into declining productivity, which could also have an adverse impact on poverty. A specific anti-poverty strategy is therefore one of the basic conditions for ensuring sustainable development. An effective strategy for tackling the problems of poverty, development and environment simultaneously should begin by focusing on resources, production and people and should cover demographic issues, enhanced health care and education, the rights of women, the role of youth and of indigenous people and local communities and a democratic participation process in association with improved governance.

3.3. Integral to such action is, together with international support, the promotion of economic growth in developing countries that is both sustained and sustainable and direct action in eradicating poverty by strengthening employment and income-generating programmes.

Objectives

3.4. The long-term objective of enabling all people to achieve sustainable livelihoods should provide an integrating factor that allows policies to address issues of development, sustainable resource management and poverty eradication simultaneously. The objectives of this programme area are:

(a) To provide all persons urgently with the opportunity to earn a sustainable livelihood;

(b) To implement policies and strategies that promote adequate levels of funding and focus on integrated human development policies, including income generation, increased local control of resources, local institution-strengthening and capacity-building and greater involvement of non-governmental organizations and local levels of government as delivery mechanisms;

(c) To develop for all poverty-stricken areas integrated strategies and programmes of sound and sustainable management of the environment, resource mobilization, poverty eradication and alleviation, employment and income generation;

(d) To create a focus in national development plans and budgets on investment in human capital, with special policies and programmes directed at rural areas, the urban poor, women and children.

Activities

3.5. Activities that will contribute to the integrated promotion of sustainable livelihoods and environmental protection cover a variety of sectoral interventions involving a range of actors, from local to global, and are essential at every level, especially the community and local levels. Enabling actions will be necessary at the national and international levels, taking full account of regional and subregional conditions to support a locally driven and country-specific approach. In general design, the programmes should:

(a) Focus on the empowerment of local and community groups through the principle of delegating authority, accountability and resources to the most appropriate level to ensure that the programme will be geographically and ecologically specific;

(b) Contain immediate measures to enable those groups to alleviate poverty and to develop sustainability;

(c) Contain a long-term strategy aimed at establishing the best possible conditions for sustainable local, regional and national development that would eliminate poverty and reduce the inequalities between various population groups. It should assist the most disadvantaged groups - in particular, women, children and youth within those groups - and refugees. The groups will include poor smallholders, pastoralists, artisans, fishing communities, landless people, indigenous communities, migrants and the urban informal sector.

3.6. The focus here is on specific cross-cutting measures - in particular, in the areas of basic education, primary/maternal health care, and the advancement of women.

(a) Empowering communities

3.7. Sustainable development must be achieved at every level of society. Peoples' organizations, women's groups and non-governmental organizations are important sources of innovation and action at the local level and have a strong interest and proven ability to promote sustainable livelihoods. Governments, in cooperation with appropriate international and non-governmental organizations, should support a community-driven approach to sustainability, which would include, inter alia:

(a) Empowering women through full participation in decision-making;

(b) Respecting the cultural integrity and the rights of indigenous people and their communities;

(c) Promoting or establishing grass-roots mechanisms to allow for the sharing of experience and knowledge between communities;

(d) Giving communities a large measure of participation in the sustainable management and protection of the local natural resources in order to enhance their productive capacity;

(e) Establishing a network of community-based learning centres for capacity-building and sustainable development.

(b) Management-related activities

3.8. Governments, with the assistance of and in cooperation with appropriate international, non-governmental and local community organizations, should establish measures that will directly or indirectly:

(a) Generate remunerative employment and productive occupational opportunities compatible with country-specific factor endowments, on a scale sufficient to take care of prospective increases in the labour force and to cover backlogs;

(b) With international support, where necessary, develop adequate infrastructure, marketing systems, technology systems, credit systems and the like and the human resources needed to support the above actions and to achieve a widening of options for resource-poor people. High priority should be given to basic education and professional training;

(c) Provide substantial increases in economically efficient resource productivity and measures to ensure that the local population benefits in adequate measure from resource use;

(d) Empower community organizations and people to enable them to achieve sustainable livelihoods;

(e) Set up an effective primary health care and maternal health care system accessible to all;

(f) Consider strengthening/developing legal frameworks for land management, access to land resources and land ownership - in particular, for women - and for the protection of tenants;

(g) Rehabilitate degraded resources, to the extent practicable, and introduce policy measures to promote sustainable use of resources for basic human needs;

(h) Establish new community-based mechanisms and strengthen existing mechanisms to enable communities to gain sustained access to resources needed by the poor to overcome their poverty;

(i) Implement mechanisms for popular participation - particularly by poor people, especially women - in local community groups, to promote sustainable development;

(j) Implement, as a matter of urgency, in accordance with country-specific conditions and legal systems, measures to ensure that women and men have the same right to decide freely and responsibly on the number and spacing of their children and have access to the information, education and means, as appropriate, to enable them to exercise this right in keeping with their freedom, dignity and personally held values, taking into account ethical and cultural considerations. Governments should take active steps to implement programmes to establish and strengthen preventive and curative health facilities, which include women-centred, women-managed, safe and effective reproductive health care and affordable, accessible services, as appropriate, for the responsible planning of family size, in keeping with freedom, dignity and personally held values, taking into account ethical and cultural considerations. Programmes should focus on providing comprehensive health care, including pre-natal care, education and information on health and responsible parenthood and should provide the opportunity for all women to breast-feed fully, at least during the first four months post-partum. Programmes should fully support women's productive and reproductive roles and well-being, with special attention to the need for providing equal and improved health care for all children and the need to reduce the risk of maternal and child mortality and sickness;

(k) Adopt integrated policies aiming at sustainability in the management of urban centres;

(l) Undertake activities aimed at the promotion of food security and, where appropriate, food self-sufficiency within the context of sustainable agriculture;

(m) Support research on and integration of traditional methods of production that have been shown to be environmentally sustainable;

(n) Actively seek to recognize and integrate informal-sector activities into the economy by removing regulations and hindrances that discriminate against activities in those sectors;

(o) Consider making available lines of credit and other facilities for the informal sector and improved access to land for the landless poor so that they can acquire the means of production and reliable access to natural resources. In many instances special considerations for women are required. Strict feasibility appraisals are needed for borrowers to avoid debt crises;

(p) Provide the poor with access to fresh water and sanitation;

(q) Provide the poor with access to primary education.

(c) Data, information and evaluation

3.9. Governments should improve the collection of information on target groups and target areas in order to facilitate the design of focused programmes and activities, consistent with the target-group needs and aspirations. Evaluation of such programmes should be gender-specific, since women are a particularly disadvantaged group.

(d) International and regional cooperation and coordination

3.10. The United Nations system, through its relevant organs, organizations and bodies, in cooperation with Member States and with appropriate international and non-governmental organizations, should make poverty alleviation a major priority and should:

(a) Assist Governments, when requested, in the formulation and implementation of national action programmes on poverty alleviation and sustainable development. Action-oriented activities of relevance to the above objectives, such as poverty eradication, projects and programmes supplemented where relevant by food aid, and support and special emphasis on employment and income generation, should be given particular attention in this regard;

(b) Promote technical cooperation among developing countries for poverty eradication activities;

(c) Strengthen existing structures in the United Nations system for coordination of action relating to poverty eradication, including the establishment of a focal point for information exchange and the formulation and implementation of replicable pilot projects to combat poverty;

(d) In the follow-up of the implementation of Agenda 21, give high priority to the review of the progress made in eradicating poverty;

(e) Examine the international economic framework, including resource flows and structural adjustment programmes, to ensure that social and environmental concerns are addressed, and in this connection, conduct a review of the policies of international organizations, bodies and agencies, including financial institutions, to ensure the continued provision of basic services to the poor and needy;

(f) Promote international cooperation to address the root causes of poverty. The development process will not gather momentum if developing countries are weighted down by external indebtedness, if development finance is inadequate, if barriers restrict access to markets and if commodity prices and the terms of trade in developing countries remain depressed.

Means of implementation

(a) Financing and cost evaluation

3.11. The secretariat of the Conference has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $30 billion, including about $15 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. This estimate overlaps estimates in other parts of Agenda 21. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Capacity-building

3.12. National capacity-building for implementation of the above activities is crucial and should be given high priority. It is particularly important to focus capacity-building at the local community level in order to support a community-driven approach to sustainability and to establish and strengthen mechanisms to allow sharing of experience and knowledge between community groups at national and international levels. Requirements for such activities are considerable and are related to the various relevant sectors of Agenda 21 calling for requisite international, financial and technological support.

Chapter 4

CHANGING CONSUMPTION PATTERNS

4.1. This chapter contains the following programme areas:

(a) Focusing on unsustainable patterns of production and consumption;

(b) Developing national policies and strategies to encourage changes in unsustainable consumption patterns.

4.2. Since the issue of changing consumption patterns is very broad, it is addressed in several parts of Agenda 21, notably those dealing with energy, transportation and wastes, and in the chapters on economic instruments and the transfer of technology. The present chapter should also be read in conjunction with chapter 5 (Demographic dynamics and sustainability).

PROGRAMME AREAS

A. Focusing on unsustainable patterns of production and consumption

Basis for action

4.3. Poverty and environmental degradation are closely interrelated. While poverty results in certain kinds of environmental stress, the major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production, particularly in industrialized countries, which is a matter of grave concern, aggravating poverty and imbalances.

4.4. Measures to be undertaken at the international level for the protection and enhancement of the environment must take fully into account the current imbalances in the global patterns of consumption and production.

4.5. Special attention should be paid to the demand for natural resources generated by unsustainable consumption and to the efficient use of those resources consistent with the goal of minimizing depletion and reducing pollution. Although consumption patterns are very high in certain parts of the world, the basic consumer needs of a large section of humanity are not being met. This results in excessive demands and unsustainable lifestyles among the richer segments, which place immense stress on the environment. The poorer segments, meanwhile, are unable to meet food, health care, shelter and educational needs. Changing consumption patterns will require a multipronged strategy focusing on demand, meeting the basic needs of the poor, and reducing wastage and the use of finite resources in the production process.

4.6. Growing recognition of the importance of addressing consumption has also not yet been matched by an understanding of its implications. Some economists are questioning traditional concepts of economic growth and underlining the importance of pursuing economic objectives that take account of the full value of natural resource capital. More needs to be known about the role of consumption in relation to economic growth and population dynamics in order to formulate coherent international and national policies.

Objectives

4.7. Action is needed to meet the following broad objectives:

(a) To promote patterns of consumption and production that reduce environmental stress and will meet the basic needs of humanity;

(b) To develop a better understanding of the role of consumption and how to bring about more sustainable consumption patterns.

Activities

(a) Management-related activities

Adopting an international approach to achieving sustainable consumption patterns

4.8. In principle, countries should be guided by the following basic objectives in their efforts to address consumption and lifestyles in the context of environment and development:

(a) All countries should strive to promote sustainable consumption patterns;

(b) Developed countries should take the lead in achieving sustainable consumption patterns;

(c) Developing countries should seek to achieve sustainable consumption patterns in their development process, guaranteeing the provision of basic needs for the poor, while avoiding those unsustainable patterns, particularly in industrialized countries, generally recognized as unduly hazardous to the environment, inefficient and wasteful, in their development processes. This requires enhanced technological and other assistance from industrialized countries.

4.9. In the follow-up of the implementation of Agenda 21 the review of progress made in achieving sustainable consumption patterns should be given high priority.

(b) Data and information

Undertaking research on consumption

4.10. In order to support this broad strategy, Governments, and/or private research and policy institutes, with the assistance of regional and international economic and environmental organizations, should make a concerted effort to:

(a) Expand or promote databases on production and consumption and develop methodologies for analysing them;

(b) Assess the relationship between production and consumption, environment, technological adaptation and innovation, economic growth and development, and demographic factors;

(c) Examine the impact of ongoing changes in the structure of modern industrial economies away from material-intensive economic growth;

(d) Consider how economies can grow and prosper while reducing the use of energy and materials and the production of harmful materials;

(e) Identify balanced patterns of consumption worldwide which the Earth can support in the long term.

Developing new concepts of sustainable economic growth and prosperity

4.11. Consideration should also be given to the present concepts of economic growth and the need for new concepts of wealth and prosperity which allow higher standards of living through changed lifestyles and are less dependent on the Earth's finite resources and more in harmony with the Earth's carrying capacity. This should be reflected in the evolution of new systems of national accounts and other indicators of sustainable development.

(c) International cooperation and coordination

4.12. While international review processes exist for examining economic, development and demographic factors, more attention needs to be paid to issues related to consumption and production patterns and sustainable lifestyles and environment.

4.13. In the follow-up of the implementation of Agenda 21, reviewing the role and impact of unsustainable production and consumption patterns and lifestyles and their relation to sustainable development should be given high priority.

Financing and cost evaluation

4.14. The Conference secretariat has estimated that implementation of this programme is not likely to require significant new financial resources.

B. Developing national policies and strategies to encourage changes in unsustainable consumption patterns

Basis for action

4.15. Achieving the goals of environmental quality and sustainable development will require efficiency in production and changes in consumption patterns in order to emphasize optimization of resource use and minimization of waste. In many instances, this will require reorientation of existing production and consumption patterns that have developed in industrial societies and are in turn emulated in much of the world.

4.16. Progress can be made by strengthening positive trends and directions that are emerging, as part of a process aimed at achieving significant changes in the consumption patterns of industries, Governments, households and individuals.

Objectives

4.17. In the years ahead, Governments, working with appropriate organizations, should strive to meet the following broad objectives:

(a) To promote efficiency in production processes and reduce wasteful consumption in the process of economic growth, taking into account the development needs of developing countries;

(b) To develop a domestic policy framework that will encourage a shift to more sustainable patterns of production and consumption;

(c) To reinforce both values that encourage sustainable production and consumption patterns and policies that encourage the transfer of environmentally sound technologies to developing countries.

Activities

(a) Encouraging greater efficiency in the use of energy and resources

4.18. Reducing the amount of energy and materials used per unit in the production of goods and services can contribute both to the alleviation of environmental stress and to greater economic and industrial productivity and competitiveness. Governments, in cooperation with industry, should therefore intensify efforts to use energy and resources in an economically efficient and environmentally sound manner by:

(a) Encouraging the dissemination of existing environmentally sound technologies;

(b) Promoting research and development in environmentally sound technologies;

(c) Assisting developing countries to use these technologies efficiently and to develop technologies suited to their particular circumstances;

(d) Encouraging the environmentally sound use of new and renewable sources of energy;

(e) Encouraging the environmentally sound and sustainable use of renewable natural resources.

(b) Minimizing the generation of wastes

4.19. At the same time, society needs to develop effective ways of dealing with the problem of disposing of mounting levels of waste products and materials. Governments, together with industry, households and the public, should make a concerted effort to reduce the generation of wastes and waste products by:

(a) Encouraging recycling in industrial processes and at the consumed level;

(b) Reducing wasteful packaging of products;

(c) Encouraging the introduction of more environmentally sound products.

(c) Assisting individuals and households to make environmentally sound purchasing decisions

4.20. The recent emergence in many countries of a more environmentally conscious consumer public, combined with increased interest on the part of some industries in providing environmentally sound consumer products, is a significant development that should be encouraged. Governments and international organizations, together with the private sector, should develop criteria and methodologies for the assessment of environmental impacts and resource requirements throughout the full life cycle of products and processes. Results of those assessments should be transformed into clear indicators in order to inform consumers and decision makers.

4.21. Governments, in cooperation with industry and other relevant groups, should encourage expansion of environmental labelling and other environmentally related product information programmes designed to assist consumers to make informed choices.

4.22. They should also encourage the emergence of an informed consumer public and assist individuals and households to make environmentally informed choices by:

(a) Providing information on the consequences of consumption choices and behaviour so as to encourage demand for environmentally sound products and use of products;

(b) Making consumers aware of the health and environmental impact of products, through such means as consumer legislation and environmental labelling;

(c) Encouraging specific consumer-oriented programmes, such as recycling and deposit/refund systems.

(d) Exercising leadership through government purchasing

4.23. Governments themselves also play a role in consumption, particularly in countries where the public sector plays a large role in the economy and can have a considerable influence on both corporate decisions and public perceptions. They should therefore review the purchasing policies of their agencies and departments so that they may improve, where possible, the environmental content of government procurement policies, without prejudice to international trade principles.

(e) Moving towards environmentally sound pricing

4.24. Without the stimulus of prices and market signals that make clear to producers and consumers the environmental costs of the consumption of energy, materials and natural resources and the generation of wastes, significant changes in consumption and production patterns seem unlikely to occur in the near future.

4.25. Some progress has begun in the use of appropriate economic instruments to influence consumer behaviour. These instruments include environmental charges and taxes, deposit/refund systems, etc. This process should be encouraged in the light of country-specific conditions.

(f) Reinforcing values that support sustainable consumption

4.26. Governments and private-sector organizations should promote more positive attitudes towards sustainable consumption through education, public awareness programmes and other means, such as positive advertising of products and services that utilize environmentally sound technologies or encourage sustainable production and consumption patterns. In the review of the implementation of Agenda 21, an assessment of the progress achieved in developing these national policies and strategies should be given due consideration.

Means of implementation

4.27. This programme is concerned primarily with changes in unsustainable patterns of consumption and production and values that encourage sustainable consumption patterns and lifestyles. It requires the combined efforts of Governments, consumers and producers. Particular attention should be paid to the significant role played by women and households as consumers and the potential impacts of their combined purchasing power on the economy.

Chapter 5

DEMOGRAPHIC DYNAMICS AND SUSTAINABILITY

5.1. This chapter contains the following programme areas:

(a) Developing and disseminating knowledge concerning the links between demographic trends and factors and sustainable development;

(b) Formulating integrated national policies for environment and development, taking into account demographic trends and factors;

(c) Implementing integrated, environment and development programmes at the local level, taking into account demographic trends and factors.

PROGRAMME AREAS

A. Developing and disseminating knowledge concerning the links between demographic trends and factors and sustainable development

Basis for action

5.2. Demographic trends and factors and sustainable development have a synergistic relationship.

5.3. The growth of world population and production combined with unsustainable consumption patterns places increasingly severe stress on the life-supporting capacities of our planet. These interactive processes affect the use of land, water, air, energy and other resources. Rapidly growing cities, unless well-managed, face major environmental problems. The increase in both the number and size of cities calls for greater attention to issues of local government and municipal management. The human dimensions are key elements to consider in this intricate set of relationships and they should be adequately taken into consideration in comprehensive policies for sustainable development. Such policies should address the linkages of demographic trends and factors, resource use, appropriate technology dissemination, and development. Population policy should also recognize the role played by human beings in environmental and development concerns. There is a need to increase awareness of this issue among decision makers at all levels and to provide both better information on which to base national and international policies and a framework against which to interpret this information.

5.4. There is a need to develop strategies to mitigate both the adverse impact on the environment of human activities and the adverse impact of environmental change on human populations. The world's population is expected to exceed 8 billion by the year 2020. Sixty per cent of the world's population already live in coastal areas, while 65 per cent of cities with populations above 2.5 million are located along the world coasts; several of them are already at or below the present sea level.

Objectives

5.5. The following objectives should be achieved as soon as practicable:

(a) To incorporate demographic trends and factors in the global analysis of environment and development issues;

(b) To develop a better understanding of the relationships among demographic dynamics, technology, cultural behaviour, natural resources and life support systems;

(c) To assess human vulnerability in ecologically sensitive areas and centres of population to determine the priorities for action at all levels, taking full account of community defined needs.

Activities

Research on the interaction between demographic trends and factors and sustainable development

5.6. Relevant international, regional and national institutions should consider undertaking the following activities:

(a) Identifying the interactions between demographic processes, natural resources and life support systems, bearing in mind regional and subregional variations deriving from, *inter alia*, different levels of development;

(b) Integrating demographic trends and factors into the ongoing study of environmental change, using the expertise of international, regional and national research networks and of local communities, first, to study the human dimensions of environmental change and, second, to identify vulnerable areas;

(c) Identifying priority areas for action and developing strategies and programmes to mitigate the adverse impact of environmental change on human populations, and vice versa.

Means of implementation

(a) Financing and cost evaluation

5.7. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $10 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Strengthening research programmes that integrate population, environment and development

5.8. In order to integrate demographic analysis into a broader social science perspective on environment and development, interdisciplinary research should be increased. International institutions and networks of experts should enhance their scientific capacity, taking full account of community experience and knowledge, and should disseminate the experience gained in multidisciplinary approaches and in linking theory to action.

5.9. Better modelling capabilities should be developed, identifying the range of possible outcomes of current human activities, especially the interrelated impact of demographic trends and factors, per capita resource use and wealth distribution, as well as the major migration flows that may be expected with increasing climatic events and cumulative environmental change that may destroy people's local livelihoods.

(c) Developing information and public awareness

5.10. Socio-demographic information should be developed in a suitable format for interfacing with physical, biological and socio-economic data. Compatible spatial and temporal scales, cross-country and time-series information, as well as global behavioural indicators should be developed, learning from local communities' perceptions and attitudes.

5.11. Awareness should be increased at all levels concerning the need to optimize the sustainable use of resources through efficient resource management, taking into account the development needs of the populations of developing countries.

5.12. Awareness should be increased of the fundamental linkages between improving the status of women and demographic dynamics, particularly through women's access to education, primary and reproductive health care programmes, economic independence and their effective, equitable participation in all levels of decision-making.

5.13. Results of research concerned with sustainable development issues should be disseminated through technical reports, scientific journals, the media, workshops, forums or other means so that the information can be used by decision makers at all levels and increase public awareness.

(d) Developing and/or enhancing institutional capacity and collaboration

5.14. Collaboration and exchange of information should be increased between research institutions and international, regional and national agencies and all other sectors (including the private sector, local communities, non-governmental organizations and scientific institutions) from both the industrialized and developing countries, as appropriate.

5.15. Efforts should be intensified to enhance the capacities of national and local governments, the private sector and non-governmental organizations in developing countries to meet the growing needs for improved management of rapidly growing urban areas.

B. Formulating integrated national policies for environment and development, taking into account demographic trends and factors

Basis for action

5.16. Existing plans for sustainable development have generally recognized demographic trends and factors as elements that have a critical influence on consumption patterns, production, lifestyles and long-term sustainability. But in future, more attention will have to be given to these issues in general policy formulation and the design of development plans. To do this, all countries will have to improve their own capacities to assess the environment and development implications of their demographic trends and factors. They will also need to formulate and implement policies and action programmes where appropriate. Policies should be designed to address the consequences of population growth built into population momentum, while at the same time incorporating measures to bring about demographic transition. They should combine environmental concerns and population issues within a holistic view of development whose primary goals include the alleviation of poverty; secure livelihoods; good health; quality of life; improvement of the status and income of women and their access to schooling and professional training, as well as fulfilment of their personal aspirations; and empowerment of individuals and communities. Recognizing that large increases in the size and number of cities will occur in developing countries under any likely population scenario, greater attention should be given to preparing for the needs, in particular of women and children, for improved municipal management and local government.

Objective

5.17. Full integration of population concerns into national planning, policy and decision-making processes should continue. Population policies and programmes should be considered, with full recognition of women's rights.

Activities

5.18. Governments and other relevant actors could, *inter alia*, undertake the following activities, with appropriate assistance from aid agencies, and report on their status of implementation to the International Conference on Population and Development to be held in 1994, especially to its committee on population and environment.

(a) Assessing the implications of national demographic trends and factors

5.19. The relationships between demographic trends and factors and environmental change and between environmental degradation and the components of demographic change should be analysed.

5.20. Research should be conducted on how environmental factors interact with socio-economic factors as a cause of migration.

5.21. Vulnerable population groups (such as rural landless workers, ethnic minorities, refugees, migrants, displaced people, women heads of household) whose changes in demographic structure may have specific impacts on sustainable development should be identified.

5.22. An assessment should be made of the implications of the age structure of the population on resource demand and dependency burdens, ranging from educational expenses for the young to health care and support for the elderly, and on household income generation.

5.23. An assessment should also be made of national population carrying capacity in the context of satisfaction of human needs and sustainable development, and special attention should be given to critical resources, such as water and land, and environmental factors, such as ecosystem health and biodiversity.

5.24. The impact of national demographic trends and factors on the traditional livelihoods of indigenous groups and local communities, including changes in traditional land use because of internal population pressures, should be studied.

(b) Building and strengthening a national information base

5.25. National databases on demographic trends and factors and environment should be built and/or strengthened, disaggregating data by ecological region (ecosystem approach), and population/environment profiles should be established by region.

5.26. Methodologies and instruments should be developed to identify areas where sustainability is, or may be, threatened by the environmental effects of demographic trends and factors, incorporating both current and projected demographic data linked to natural environmental processes.

5.27. Case-studies of local level responses by different groups to demographic dynamics should be developed, particularly in areas subject to environmental stress and in deteriorating urban centres.

5.28. Population data should be disaggregated by, *inter alia*, sex and age in order to take into account the implications of the gender division of labour for the use and management of natural resources.

(c) Incorporating demographic features into policies and plans

5.29. In formulating human settlements policies, account should be taken of resource needs, waste production and ecosystem health.

5.30. The direct and induced effects of demographic changes on environment and development programmes should, where appropriate, be integrated, and the impact on demographic features assessed.

5.31. National population policy goals and programmes that are consistent with national environment and development plans for sustainability and in keeping with the freedom, dignity and personally held values of individuals should be established and implemented.

5.32. Appropriate socio-economic policies for the young and the elderly, both in terms of family and state support systems, should be developed.

5.33. Policies and programmes should be developed for handling the various types of migrations that result from or induce environmental disruptions, with special attention to women and vulnerable groups.

5.34. Demographic concerns, including concerns for environmental migrants and displaced people, should be incorporated in the programmes for sustainable development of relevant international and regional institutions.

5.35. National reviews should be conducted and the integration of population policies in national development and environment strategies should be monitored nationally.

Means of implementation

(a) Financing and cost evaluation

5.36. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $90 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Raising awareness of demographic and sustainable development interactions

5.37. Understanding of the interactions between demographic trends and factors and sustainable development should be increased in all sectors of society. Stress should be placed on local and national action. Demographic and sustainable development education should be coordinated and integrated in both the formal and non-formal education sectors. Particular attention should be given to population literacy programmes, notably for women. Special emphasis should be placed on the linkage between these programmes, primary environmental care and the provision of primary health care and services.

(c) Strengthening institutions

5.38. The capacity of national, regional and local structures to deal with issues relating to demographic trends and factors and sustainable development should be enhanced. This would involve strengthening the relevant bodies responsible for population issues to enable them to elaborate policies consistent with the national prospects for sustainable development. Cooperation among government, national research institutions, non-governmental organizations and local communities in assessing problems and evaluating policies should also be enhanced.

5.39. The capacity of the relevant United Nations organs, organizations and bodies, international and regional intergovernmental bodies, non-governmental organizations and local communities should, as appropriate, be enhanced to help countries develop sustainable development policies on request and, as appropriate, provide assistance to environmental migrants and displaced people.

5.40. Inter-agency support for national sustainable development policies and programmes should be improved through better coordination of population and environment activities.

(d) Promoting human resource development

5.41. The international and regional scientific institutions should assist Governments, upon request, to include concerns regarding the population/environment interactions at the global, ecosystem and micro-levels in the training of demographers and population and environment specialists. Training should include research on linkages and ways to design integrated strategies.

C. Implementing integrated environment and development programmes at the local level, taking into account demographic trends and factors

Basis for action

5.42. Population programmes are more effective when implemented together with appropriate cross-sectoral policies. To attain sustainability at the local level, a new framework is needed that integrates demographic trends and factors with such factors as ecosystem health, technology and human settlements, and with socio-economic structures and access to resources. Population programmes should be consistent with socio-economic and environmental planning. Integrated sustainable development programmes should closely correlate action on demographic trends and factors with resource management activities and development goals that meet the needs of the people concerned.

Objective

5.43. Population programmes should be implemented along with natural resource management and development programmes at the local level that will ensure sustainable use of natural resources, improve the quality of life of the people and enhance environmental quality.

Activities

5.44. Governments and local communities, including community-based women's organizations and national non-governmental organizations, consistent with national plans, objectives, strategies and priorities, could, inter alia, undertake the activities set out below with the assistance and cooperation of international organizations, as appropriate. Governments could share their experience in the implementation of Agenda 21 at the International Conference on Population and Development, to be held in 1994, especially its committee on population and environment.

(a) Developing a framework for action

5.45. An effective consultative process should be established and implemented with concerned groups of society where the formulation and decision-making of all components of the programmes are based on a nationwide consultative process drawing on community meetings, regional workshops and national seminars, as appropriate. This process should ensure that views of women and men on needs, perspective and constraints are equally well reflected in the design of programmes, and that solutions are rooted in specific experience. The poor and underprivileged should be priority groups in this process.

5.46. Nationally determined policies for integrated and multifaceted programmes, with special attention to women, to the poorest people living in critical areas and to other vulnerable groups should be implemented, ensuring the involvement of groups with a special potential to act as agents for change and sustainable development. Special emphasis should be placed on those programmes that achieve multiple objectives, encouraging sustainable economic development, and mitigating adverse impacts of demographic trends and factors, and avoiding long-term environmental damage. Food security, access to secure tenure, basic shelter, and essential infrastructure, education, family welfare, women's reproductive health, family credit schemes, reforestation programmes, primary environmental care, women's employment should, as appropriate, be included among other factors.

5.47. An analytical framework should be developed to identify complementary elements of sustainable development policies as well as the national mechanisms to monitor and evaluate their effects on population dynamics.

5.48. Special attention should be given to the critical role of women in population/environment programmes and in achieving sustainable development. Projects should take advantage of opportunities to link social, economic and environmental gains for women and their families. Empowerment of women is essential and should be assured through education, training and policies to accord and improve women's right and access to assets, human and civil rights, labour-saving measures, job opportunities and participation in decision-making. Population/environment programmes must enable women to mobilize themselves to alleviate their burden and improve their capacity to participate in and benefit from socio-economic development. Specific measures should be undertaken to close the gap between female and male illiteracy rates.

(b) Supporting programmes that promote changes in demographic trends and factors towards sustainability

5.49. Reproductive health programmes and services, should, as appropriate, be developed and enhanced to reduce maternal and infant mortality from all causes and enable women and men to fulfil their personal aspirations in terms of family size, in a way in keeping with their freedom and dignity and personally held values.

5.50. Governments should take active steps to implement, as a matter of urgency, in accordance with country-specific conditions and legal systems, measures to ensure that women and men have the same right to decide freely and responsibly on the number and spacing of their children, to have access to the information, education and means, as appropriate, to enable them to exercise this right in keeping with their freedom, dignity and personally held values taking into account ethical and cultural considerations.

5.51. Governments should take active steps to implement programmes to establish and strengthen preventive and curative health facilities that include women-centred, women-managed, safe and effective reproductive health care and affordable, accessible services, as appropriate, for the responsible planning of family size, in keeping with freedom, dignity and personally held values and taking into account ethical and cultural considerations. Programmes should focus on providing comprehensive health care, including pre-natal care, education and information on health and responsible parenthood and should provide the opportunity for all women to breast-feed fully, at least during the first four months post-partum. Programmes should fully support women's productive and reproductive roles and well being, with special attention to the need for providing equal and improved health care for all children and the need to reduce the risk of maternal and child mortality and sickness.

5.52. Consistent with national priorities, culturally based information and education programmes that transmit reproductive health messages to men and women that are easily understood should be developed.

(c) Creating appropriate institutional conditions

5.53. Constituencies and institutional conditions to facilitate the implementation of demographic activities should, as appropriate, be fostered. This requires support and commitment from political, indigenous, religious and traditional authorities, the private sector and the national scientific community. In developing these appropriate institutional conditions, countries should closely involve established national machinery for women.

5.54. Population assistance should be coordinated with bilateral and multilateral donors to ensure that population needs and requirements of all developing countries are addressed, fully respecting the overall coordinating responsibility and the choice and strategies of the recipient countries.

5.55. Coordination should be improved at local and international levels. Working practices should be enhanced in order to make optimum use of resources, draw on collective experience and improve the implementation of programmes. UNFPA and other relevant agencies should strengthen the coordination of international cooperation activities with recipient and donor countries in order to ensure that adequate funding is available to respond to growing needs.

5.56. Proposals should be developed for local, national and international population/environment programmes in line with specific needs for achieving sustainability. Where appropriate, institutional changes must be implemented so that old-age security does not entirely depend on input from family members.

Means of implementation

(a) Financing and cost evaluation

5.57. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $7 billion, including about $3.5 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Research

5.58. Research should be undertaken with a view to developing specific action programmes; it will be necessary to establish priorities between proposed areas of research.

5.59. Socio-demographic research should be conducted on how populations respond to a changing environment.

5.60. Understanding of socio-cultural and political factors that can positively influence acceptance of appropriate population policy instruments should be improved.

5.61. Surveys of changes in needs for appropriate services relating to responsible planning of family size, reflecting variations among different socio-economic groups and variations in different geographical regions should be undertaken.

(c) Human resource development and capacity-building

5.62. The areas of human resource development and capacity-building, with particular attention to the education and training of women, are areas of critical importance and are a very high priority in the implementation of population programmes.

5.63. Workshops to help programme and projects managers to link population programmes to other development and environmental goals should be conducted.

5.64. Educational materials, including guides/workbooks for planners and decision makers and other actors of population/environment/development programmes, should be developed.

5.65. Cooperation should be developed between Governments, scientific institutions and non-governmental organizations within the region, and similar institutions outside the region. Cooperation with local organizations should be fostered in ordered to raise awareness, engage in demonstration projects and report on the experience gained.

5.66. The recommendations contained in this chapter should in no way prejudice discussions at the International Conference on Population and Development in 1994, which will be the appropriate forum for dealing with population and development issues, taking into account the recommendations of the International Conference on Population, held in Mexico City in 1984, 1/ and the Forward-looking Strategies for the Advancement of Women, 2/ adopted by the World Conference to Review and Appraise the Achievements of the United Decade for Women: Equality, Development and Peace, held in Nairobi in 1985.

Notes

1/ Report of the International Conference on Population, Mexico City, 6-14 August 1984 (United Nations publication, Sales No. E.84.XIII.8), chap. I.

2/ Report of the World Conference to Review and Appraise the Achievements of the United Nations Decade for Women: Equality, Development and Peace, Nairobi, 15-26 July 1985 (United Nations publication, Sales No. E.84.IV.10), chap. I, sect. A.

Chapter 6

PROTECTING AND PROMOTING HUMAN HEALTH

INTRODUCTION

6.1. Health and development are intimately interconnected. Both insufficient development leading to poverty and inappropriate development resulting in overconsumption, coupled with an expanding world population, can result in severe environmental health problems in both developing and developed nations. Action items under Agenda 21 must address the primary health needs of the world's population, since they are integral to the achievement of the goals of sustainable development and primary environmental care. The linkage of health, environmental and socio-economic improvements requires intersectoral efforts. Such efforts, involving education, housing, public works and community groups, including businesses, schools and universities and religious, civic and cultural organizations, are aimed at enabling people in their communities to ensure sustainable development. Particularly relevant is the inclusion of prevention programmes rather than relying solely on remediation and treatment. Countries ought to develop plans for priority actions, drawing on the programme areas in this chapter, which are based on cooperative planning by the various levels of government, non-governmental organizations and local communities. An appropriate international organization, such as WHO, should coordinate these activities.

6.2. The following programme areas are contained in this chapter:

(a) Meeting primary health care needs, particularly in rural areas;

(b) Control of communicable diseases;

(c) Protecting vulnerable groups;

(d) Meeting the urban health challenge;

(e) Reducing health risks from environmental pollution and hazards.

PROGRAMME AREAS

A. Meeting primary health care needs, particularly in rural areas

Basis for action

6.3. Health ultimately depends on the ability to manage successfully the interaction between the physical, spiritual, biological and economic/social environment. Sound development is not possible without a healthy population; yet most developmental activities affect the environment to some degree, which in turn causes or exacerbates many health problems. Conversely, it is the very lack of development that adversely affects the health condition of many people, which can be alleviated only through development. The health sector cannot meet basic needs and objectives on its own; it is dependent on social, economic and spiritual development, while directly contributing to such development. It is also dependent on a healthy environment, including the provision of a safe water supply and sanitation and the promotion of a safe food supply and proper nutrition. Particular attention should be directed towards food safety, with priority placed on the elimination of food contamination; comprehensive and sustainable water policies to ensure safe drinking water and sanitation to preclude both microbial and chemical contamination; and promotion of health education, immunization and provision of essential drugs. Education and appropriate services regarding responsible planning of family size, with respect for cultural, religious and social aspects, in keeping with freedom, dignity and personally held values and taking into account ethical and cultural considerations, also contribute to these intersectoral activities.

Objectives

6.4. Within the overall strategy to achieve health for all by the year 2000, the objectives are to meet the basic health needs of rural peri-urban and urban populations; to provide the necessary specialized environmental health services; and to coordinate the involvement of citizens, the health sector, the health-related sectors and relevant non-health sectors (business, social, educational and religious institutions) in solutions to health problems. As a matter of priority, health service coverage should be achieved for population groups in greatest need, particularly those living in rural areas.

Activities

6.5. National Governments and local authorities, with the support of relevant non-governmental organizations and international organizations, in the light of countries' specific conditions and needs, should strengthen their health sector programmes, with special attention to rural needs, to:

(a) Build basic health infrastructures, monitoring and planning systems:

(i) Develop and strengthen primary health care systems that are practical, community-based, scientifically sound, socially acceptable and appropriate to their needs and that meet basic health needs for clean water, safe food and sanitation;

(ii) Support the use and strengthening of mechanisms that improve coordination between health and related sectors at all appropriate levels of government, and in communities and relevant organizations;

(iii) Develop and implement rational and affordable approaches to the establishment and maintenance of health facilities;

(iv) Ensure and, where appropriate, increase provision of social services support;

(v) Develop strategies, including reliable health indicators, to monitor the progress and evaluate the effectiveness of health programmes;

(vi) Explore ways to finance the health system based on the assessment of the resources needed and identify the various financing alternatives;

(vii) Promote health education in schools, information exchange, technical support and training;

(viii) Support initiatives for self-management of services by vulnerable groups;

(ix) Integrate traditional knowledge and experience into national health systems, as appropriate;

(x) Promote the provisions for necessary logistics for outreach activities, particularly in rural areas;

(xi) Promote and strengthen community-based rehabilitation activities for the rural handicapped;

(b) Support research and methodology development:

(i) Establish mechanisms for sustained community involvement in environmental health activities, including optimization of the appropriate use of community financial and human resources;

(ii) Conduct environmental health research, including behaviour research and research on ways to increase coverage and ensure greater utilization of services by peripheral, underserved and vulnerable populations, as appropriate to good prevention services and health care;

(iii) Conduct research into traditional knowledge of prevention and curative health practices.

Means of implementation

(a) Financing and cost evaluation

6.6. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $40 billion, including about $5 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

6.7. New approaches to planning and managing health care systems and facilities should be tested, and research on ways of integrating appropriate technologies into health infrastructures supported. The development of scientifically sound health technology should enhance adaptability to local needs and maintainability by community resources, including the maintenance and repair of equipment used in health care. Programmes to facilitate the transfer and sharing of information and expertise should be developed, including communication methods and educational materials.

(c) Human resource development

6.8. Intersectoral approaches to the reform of health personnel development should be strengthened to ensure its relevance to the "Health for All" strategies. Efforts to enhance managerial skills at the district level should be supported, with the aim of ensuring the systematic development and efficient operation of the basic health system. Intensive, short, practical training programmes with emphasis on skills in effective communication, community organization and facilitation of behaviour change should be developed in order to prepare the local personnel of all sectors involved in social development for carrying out their respective roles. In cooperation with the education sector, special health education programmes should be developed focusing on the role of women in the health-care system.

(d) Capacity-building

6.9. Governments should consider adopting enabling and facilitating strategies to promote the participation of communities in meeting their own needs, in addition to providing direct support to the provision of health-care services. A major focus should be the preparation of community-based health and health-related workers to assume an active role in community health education, with emphasis on team work, social mobilization and the support of other development workers. National programmes should cover district health systems in urban, peri-urban and rural areas, the delivery of health programmes at the district level, and the development and support of referral services.

B. Control of communicable diseases

Basis for action

6.10. Advances in the development of vaccines and chemotherapeutic agents have brought many communicable diseases under control. However, there remain many important communicable diseases for which environmental control measures are indispensable, especially in the field of water supply and sanitation. Such diseases include cholera, diarrhoeal diseases, leishmaniasis, malaria and schistosomiasis. In all such instances, the environmental measures, either as an integral part of primary health care or undertaken outside the health sector, form an indispensable component of overall disease control strategies, together with health and hygiene education, and in some cases, are the only component.

6.11. With HIV infection levels estimated to increase to 30-40 million by the year 2000, the socio-economic impact of the pandemic is expected to be devastating for all countries, and increasingly for women and children. While direct health costs will be substantial, they will be dwarfed by the indirect costs of the pandemic - mainly costs associated with the loss of income and decreased productivity of the workforce. The pandemic will inhibit growth of the service and industrial sectors and significantly increase the costs of human capacity-building and retraining. The agricultural sector is particularly affected where production is labour-intensive.

Objectives

6.12. A number of goals have been formulated through extensive consultations in various international forums attended by virtually all Governments, relevant United Nations organizations (including WHO, UNICEF, UNFPA, UNESCO, UNDP and the World Bank) and a number of non-governmental organizations. Goals (including but not limited to those listed below) are recommended for implementation by all countries where they are applicable, with appropriate adaptation to the specific situation of each country in terms of phasing, standards, priorities and availability of resources, with respect for cultural, religious and social aspects, in keeping with freedom, dignity and personally held values and taking into account ethical considerations. Additional goals that are particularly relevant to a country's specific situation should be added in the country's national plan of action (Plan of Action for Implementing the World Declaration on the Survival, Protection and Development of Children in the 1990s). 1/ Such national level action plans should be coordinated and monitored from within the public health sector. Some major goals are:

(a) By the year 2000, to eliminate guinea worm disease (dracunculiasis);

(b) By the year 2000, eradicate polio;

(c) By the year 2000, to effectively control onchocerciasis (river blindness) and leprosy;

(d) By 1995, to reduce measles deaths by 95 per cent and reduce measles cases by 90 per cent compared with pre-immunization levels;

(e) By continued efforts, to provide health and hygiene education and to ensure universal access to safe drinking water and universal access to sanitary measures of excreta disposal, thereby markedly reducing waterborne diseases such as cholera and schistosomiasis and reducing:

(i) By the year 2000, the number of deaths from childhood diarrhoea in developing countries by 50 to 70 per cent;

(ii) By the year 2000, the incidence of childhood diarrhoea in developing countries by at least 25 to 50 per cent;

(f) By the year 2000, to initiate comprehensive programmes to reduce mortality from acute respiratory infections in children under five years by at least one third, particularly in countries with high infant mortality;

(g) By the year 2000, to provide 95 per cent of the world's child population with access to appropriate care for acute respiratory infections within the community and at first referral level;

(h) By the year 2000, to institute anti-malaria programmes in all countries where malaria presents a significant health problem and maintain the transmission-free status of areas freed from endemic malaria;

(i) By the year 2000, to implement control programmes in countries where major human parasitic infections are endemic and achieve an overall reduction in the prevalence of schistosomiasis and of other trematode infections by 40 per cent and 25 per cent, respectively, from a 1984 baseline, as well as a marked reduction in incidence, prevalence and intensity of filarial infections;

(j) To mobilize and unify national and international efforts against AIDS to prevent infection and to reduce the personal and social impact of HIV infection;

(k) To contain the resurgence of tuberculosis, with particular emphasis on multiple antibiotic resistant forms;

(l) To accelerate research on improved vaccines and implement to the fullest extent possible the use of vaccines in the prevention of disease.

Activities

6.13. Each national Government, in accordance with national plans for public health, priorities and objectives, should consider developing a national health action plan with appropriate international assistance and support, including, at a minimum, the following components:

(a) National public health systems:

(i) Programmes to identify environmental hazards in the causation of communicable diseases;

(ii) Monitoring systems of epidemiological data to ensure adequate forecasting of the introduction, spread or aggravation of communicable diseases;

(iii) Intervention programmes, including measures consistent with the principles of the global AIDS strategy;

(iv) Vaccines for the prevention of communicable diseases;

(b) Public information and health education:

Provide education and disseminate information on the risks of endemic communicable diseases and build awareness on environmental methods for control of communicable diseases to enable communities to play a role in the control of communicable diseases;

(c) Intersectoral cooperation and coordination:

(i) Second experienced health professionals to relevant sectors, such as planning, housing and agriculture;

(ii) Develop guidelines for effective coordination in the areas of professional training, assessment of risks and development of control technology;

(d) Control of environmental factors that influence the spread of communicable diseases:

Apply methods for the prevention and control of communicable diseases, including water supply and sanitation control, water pollution control, food quality control, integrated vector control, garbage collection and disposal and environmentally sound irrigation practices;

(e) Primary health care system:

(i) Strengthen prevention programmes, with particular emphasis on adequate and balanced nutrition;

(ii) Strengthen early diagnostic programmes and improve capacities for early preventative/treatment action;

(iii) Reduce the vulnerability to HIV infection of women and their offspring;

(f) Support for research and methodology development:

(i) Intensify and expand multidisciplinary research, including focused efforts on the mitigation and environmental control of tropical diseases;

(ii) Carry out intervention studies to provide a solid epidemiological basis for control policies and to evaluate the efficiency of alternative approaches;

(iii) Undertake studies in the population and among health workers to determine the influence of cultural, behavioural and social factors on control policies;

(g) Development and dissemination of technology:

(i) Develop new technologies for the effective control of communicable diseases;

(ii) Promote studies to determine how to optimally disseminate results from research;

(iii) Ensure technical assistance, including the sharing of knowledge and know-how.

Means of implementation

(a) Financing and cost evaluation

6.14. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $4 billion, including about $900 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

6.15. Efforts to prevent and control diseases should include investigations of the epidemiological, social and economic bases for the development of more effective national strategies for the integrated control of communicable diseases. Cost-effective methods of environmental control should be adapted to local developmental conditions.

(c) Human resource development

6.16. National and regional training institutions should promote broad intersectoral approaches to prevention and control of communicable diseases, including training in epidemiology and community prevention and control, immunology, molecular biology and the application of new vaccines. Health education materials should be developed for use by community workers and for the education of mothers for the prevention and treatment of diarrhoeal diseases in the home.

(d) Capacity-building

6.17. The health sector should develop adequate data on the distribution of communicable diseases, as well as the institutional capacity to respond and collaborate with other sectors for prevention, mitigation and correction of communicable disease hazards through environmental protection. The advocacy at policy- and decision-making levels should be gained, professional and societal support mobilized, and communities organized in developing self-reliance.

C. Protecting vulnerable groups

Basis for action

6.18. In addition to meeting basic health needs, specific emphasis has to be given to protecting and educating vulnerable groups, particularly infants, youth, women, indigenous people and the very poor as a prerequisite for sustainable development. Special attention should also be paid to the health needs of the elderly and disabled population.

6.19. Infants and children. Approximately one third of the world's population are children under 15 years old. At least 15 million of these children die annually from such preventable causes as birth trauma, birth asphyxia, acute respiratory infections, malnutrition, communicable diseases and diarrhoea. The health of children is affected more severely than other population groups by malnutrition and adverse environmental factors, and many children risk exploitation as cheap labour or in prostitution.

6.20. Youth. As has been the historical experience of all countries, youth are particularly vulnerable to the problems associated with economic development, which often weakens traditional forms of social support essential for the healthy development, of young people. Urbanization and changes in social mores have increased substance abuse, unwanted pregnancy and sexually transmitted diseases, including AIDS. Currently more than half of all people alive are under the age of 25, and four of every five live in developing countries. Therefore it is important to ensure that historical experience is not replicated.

6.21. Women. In developing countries, the health status of women remains relatively low, and during the 1980s poverty, malnutrition and general ill-health in women were even rising. Most women in developing countries still do not have adequate basic educational opportunities and they lack the means of promoting their health, responsibly controlling their reproductive life and improving their socio-economic status. Particular attention should be given to the provision of pre-natal care to ensure healthy babies.

6.22. Indigenous people and their communities. Indigenous people had their communities make up a significant percentage of global population. The outcomes of their experience have tended to be very similar in that the basis of their relationship with traditional lands has been fundamentally changed. They tend to feature disproportionately in unemployment, lack of housing, poverty and poor health. In many countries the number of indigenous people is growing faster than the general population. Therefore it is important to target health initiatives for indigenous people.

Objectives

6.23. The general objectives of protecting vulnerable groups are to ensure that all such individuals should be allowed to develop to their full potential (including healthy physical, mental and spiritual development); to ensure that young people can develop, establish and maintain healthy lives; to allow women to perform their key role in society; and to support indigenous people through educational, economic and technical opportunities.

6.24. Specific major goals for child survival, development and protection were agreed upon at the World Summit for Children and remain valid also for Agenda 21. Supporting and sectoral goals cover women's health and education, nutrition, child health, water and sanitation, basic education and children in difficult circumstances.

6.25. Governments should take active steps to implement, as a matter of urgency, in accordance with country specific conditions and legal systems, measures to ensure that women and men have the same right to decide freely and responsibly on the number and spacing of their children, to have access to the information, education and means, as appropriate, to enable them to exercise this right in keeping with their freedom, dignity and personally held values, taking into account ethical and cultural considerations.

6.26. Governments should take active steps to implement programmes to establish and strengthen preventive and curative health facilities which include women-centred, women-managed, safe and effective reproductive health care and affordable, accessible services, as appropriate, for the responsible planning of family size, in keeping with freedom, dignity and personally held values and taking into account ethical and cultural considerations. Programmes should focus on providing comprehensive health care, including pre-natal care, education and information on health and responsible parenthood and should provide the opportunity for all women to breast-feed fully, at least during the first four months post-partum. Programmes should fully support women's productive and reproductive roles and well-being, with special attention to the need for providing equal and improved health care for all children and the need to reduce the risk of maternal and child mortality and sickness.

Activities

6.27. National Governments, in cooperation with local and non-governmental organizations, should initiate or enhance programmes in the following areas:

(a) Infants and children:

(i) Strengthen basic health-care services for children in the context of primary health-care delivery, including prenatal care, breast-feeding, immunization and nutrition programmes;

(ii) Undertake widespread adult education on the use of oral rehydration therapy for diarrhoea, treatment of respiratory infections and prevention of communicable diseases;

(iii) Promote the creation, amendment and enforcement of a legal framework protecting children from sexual and workplace exploitation;

(iv) Protect children from the effects of environmental and occupational toxic compounds;

(b) Youth:

Strengthen services for youth in health, education and social sectors in order to provide better information, education, counselling and treatment for specific health problems, including drug abuse;

(c) Women:

(i) Involve women's groups in decision-making at the national and community levels to identify health risks and incorporate health issues in national action programmes on women and development;

(ii) Provide concrete incentives to encourage and maintain attendance of women of all ages at school and adult education courses, including health education and training in primary, home and maternal health care;

(iii) Carry out baseline surveys and knowledge, attitude and practice studies on the health and nutrition of women throughout their life cycle, especially as related to the impact of environmental degradation and adequate resources;

(d) Indigenous people and their communities:

(i) Strengthen, through resources and self-management, preventative and curative health services;

(ii) Integrate traditional knowledge and experience into health systems.

Means of implementation

(a) Financing and cost evaluation

6.28. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $3.7 billion, including about $400 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

6.29. Educational, health and research institutions should be strengthened to provide support to improve the health of vulnerable groups. Social research on the specific problems of these groups should be expanded and methods for implementing flexible pragmatic solutions explored, with emphasis on preventive measures. Technical support should be provided to Governments, institutions and non-governmental organizations for youth, women and indigenous people in the health sector.

(c) Human resources development

6.30. The development of human resources for the health of children, youth and women should include reinforcement of educational institutions, promotion of interactive methods of education for health and increased use of mass media in disseminating information to the target groups. This requires the training of more community health workers, nurses, midwives, physicians, social scientists and educators, the education of mothers, families and communities and the strengthening of ministries of education, health, population etc.

(d) Capacity-building

6.31. Governments should promote, where necessary: (i) the organization of national, intercountry and interregional symposia and other meetings for the exchange of information among agencies and groups concerned with the health of children, youth, women and indigenous people, and (ii) women's organizations, youth groups and indigenous people's organizations to facilitate health and consult them on the creation, amendment and enforcement of legal frameworks to ensure a healthy environment for children, youth, women and indigenous peoples.

D. Meeting the urban health challenge

Basis for action

6.32. For hundreds of millions of people, the poor living conditions in urban and peri-urban areas are destroying lives, health, and social and moral values. Urban growth has outstripped society's capacity to meet human needs, leaving hundreds of millions of people with inadequate incomes, diets, housing and services. Urban growth exposes populations to serious environmental hazards and has outstripped the capacity of municipal and local governments to provide the environmental health services that the people need. All too often, urban development is associated with destructive effects on the physical environment and the resource base needed for sustainable development. Environmental pollution in urban areas is associated with excess morbidity and mortality. Overcrowding and inadequate housing contribute to respiratory diseases, tuberculosis, meningitis and other diseases. In urban environments, many factors that affect human health are outside the health sector. Improvements in urban health therefore will depend on coordinated action by all levels of government, health care providers, businesses, religious groups, social and educational institutions and citizens.

Objectives

6.33. The health and well-being of all urban dwellers must be improved so that they can contribute to economic and social development. The global objective is to achieve a 10 to 40 per cent improvement in health indicators by the year 2000. The same rate of improvement should be achieved for environmental, housing and health service indicators. These include the development of quantitative objectives for infant mortality, maternal mortality, percentage of low birth weight newborns and specific indicators (e.g. tuberculosis as an indicator of crowded housing, diarrhoeal diseases as indicators of inadequate water and sanitation, rates of industrial and transportation accidents that indicate possible opportunities for prevention of injury, and social problems such as drug abuse, violence and crime that indicate underlying social disorders).

Activities

6.34. Local authorities, with the appropriate support of national Governments and international organizations should be encouraged to take effective measures to initiate or strengthen the following activities:

(a) Develop and implement municipal and local health plans:

(i) Establish or strengthen intersectoral committees at both the political and technical level, including active collaboration on linkages with scientific, cultural, religious, medical, business, social and other city institutions, using networking arrangements;

(ii) Adopt or strengthen municipal or local "enabling strategies" that emphasize "doing with" rather than "doing for" and create supportive environments for health;

(iii) Ensure that public health education in schools, workplace, mass media etc. is provided or strengthened;

(iv) Encourage communities to develop personal skills and awareness of primary health care;

(v) Promote and strengthen community-based rehabilitation activities for the urban and peri-urban disabled and the elderly;

(b) Survey, where necessary, the existing health, social and environmental conditions in cities, including documentation of intra-urban differences;

(c) Strengthen environmental health services:

(i) Adopt health impact and environmental impact assessment procedures;

(ii) Provide basic and in-service training for new and existing personnel;

(d) Establish and maintain city networks for collaboration and exchange of models of good practice.

Means of implementation

(a) Financing and cost evaluation

6.35. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $222 million, including about $22 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

6.36. Decision-making models should be further developed and more widely used to assess the costs and the health and environment impacts of alternative technologies and strategies. Improvement in urban development and management requires better national and municipal statistics based on practical, standardized indicators. Development of methods is a priority for the measurement of intra-urban and intra-district variations in health status and environmental conditions, and for the application of this information in planning and management.

(c) Human resources development

6.37. Programmes must supply the orientation and basic training of municipal staff required for the healthy city processes. Basic and in-service training of environmental health personnel will also be needed.

(d) Capacity-building

6.38. The programme is aimed towards improved planning and management capabilities in the municipal and local government and its partners in central Government, the private sector and universities. Capacity development should be focused on obtaining sufficient information, improving coordination mechanisms linking all the key actors, and making better use of available instruments and resources for implementation.

E. Reducing health risks from environmental pollution and hazards

Basis for action

6.39. In many locations around the world the general environment (air, water and land), workplaces and even individual dwellings are so badly polluted that the health of hundreds of millions of people is adversely affected. This is, inter alia, due to past and present developments in consumption and production patterns and lifestyles, in energy production and use, in industry, in transportation etc., with little or no regard for environmental protection. There have been notable improvements in some countries, but deterioration of the environment continues. The ability of countries to tackle pollution and health problems is greatly restrained because of lack of resources. Pollution control and health protection measures have often not kept pace with economic development. Considerable development-related environmental health hazards exist in the newly industrializing countries. Furthermore, the recent analysis of WHO has clearly established the interdependence among the factors of health, environment and development and has revealed that most countries are lacking such integration as would lead to an effective pollution control mechanism. 2/ Without prejudice to such criteria as may be agreed upon by the international community, or to standards which will have to be determined nationally, it will be essential in all cases to consider the systems of values prevailing in each country and the extent of the applicability of standards that are valid for the most advanced countries but may be inappropriate and of unwarranted social cost for the developing countries.

Objectives

6.40. The overall objective is to minimize hazards and maintain the environment to a degree that human health and safety is not impaired or endangered and yet encourage development to proceed. Specific programme objectives are:

(a) By the year 2000, to incorporate appropriate environmental and health safeguards as part of national development programmes in all countries;

(b) By the year 2000, to establish, as appropriate, adequate national infrastructure and programmes for providing environmental injury, hazard surveillance and the basis for abatement in all countries;

(c) By the year 2000, to establish, as appropriate, integrated programmes for tackling pollution at the source and at the disposal site, with a focus on abatement actions in all countries;

(d) To identify and compile, as appropriate, the necessary statistical information on health effects to support cost/benefit analysis, including environmental health impact assessment for pollution control, prevention and abatement measures.

Activities

6.41. Nationally determined action programmes, with international assistance, support and coordination, where necessary, in this area should include:

(a) Urban air pollution:

(i) Develop appropriate pollution control technology on the basis of risk assessment and epidemiological research for the introduction of environmentally sound production processes and suitable safe mass transport;

(ii) Develop air pollution control capacities in large cities, emphasizing enforcement programmes and using monitoring networks, as appropriate;

(b) Indoor air pollution:

(i) Support research and develop programmes for applying prevention and control methods to reducing indoor air pollution, including the provision of economic incentives for the installation of appropriate technology;

(ii) Develop and implement health education campaigns, particularly in developing countries, to reduce the health impact of domestic use of biomass and coal;

(c) Water pollution:

(i) Develop appropriate water pollution control technologies on the basis of health risk assessment;

(ii) Develop water pollution control capacities in large cities;

(d) Pesticides:

Develop mechanisms to control the distribution and use of pesticides in order to minimize the risks to human health by transportation, storage, application and residual effects of pesticides used in agriculture and preservation of wood;

(e) Solid waste:

(i) Develop appropriate solid waste disposal technologies on the basis of health risk assessment;

(ii) Develop appropriate solid waste disposal capacities in large cities;

(f) Human settlements:

Develop programmes for improving health conditions in human settlements, in particular within slums and non-tenured settlements, on the basis of health risk assessment;

(g) Noise:

Develop criteria for maximum permitted safe noise exposure levels and promote noise assessment and control as part of environmental health programmes;

(h) Ionizing and non-ionizing radiation:

Develop and implement appropriate national legislation, standards and enforcement procedures on the basis of existing international guidelines;

(i) Effects of ultraviolet radiation:

(i) Undertake, as a matter of urgency, research on the effects on human health of the increasing ultraviolet radiation reaching the earth's surface as a consequence of depletion of the stratospheric ozone layer;

(ii) On the basis of the outcome of this research, consider taking appropriate remedial measures to mitigate the above-mentioned effects on human beings;

(j) Industry and energy production:

(i) Establish environmental health impact assessment procedures for the planning and development of new industries and energy facilities;

(ii) Incorporate appropriate health risk analysis in all national programmes for pollution control and management, with particular emphasis on toxic compounds such as lead;

(iii) Establish industrial hygiene programmes in all major industries for the surveillance of workers' exposure to health hazards;

(iv) Promote the introduction of environmentally sound technologies within the industry and energy sectors;

(k) Monitoring and assessment:

Establish, as appropriate, adequate environmental monitoring capacities for the surveillance of environmental quality and the health status of populations;

(l) Injury monitoring and reduction:

(i) Support, as appropriate, the development of systems to monitor the incidence and cause of injury to allow well-targeted intervention/prevention strategies;

(ii) Develop, in accordance with national plans, strategies in all sectors (industry, traffic and others) consistent with the WHO safe cities and safe communities programmes, to reduce the frequency and severity of injury;

(iii) Emphasize preventive strategies to reduce occupationally derived diseases and diseases caused by environmental and occupational toxins to enhance worker safety;

(m) Research promotion and methodology development:

(i) Support the development of new methods for the quantitative assessment of health benefits and cost associated with different pollution control strategies;

(ii) Develop and carry out interdisciplinary research on the combined health effects of exposure to multiple environmental hazards, including epidemiological investigations of long-term exposures to low levels of pollutants and the use of biological markers capable of estimating human exposures, adverse effects and susceptibility to environmental agents.

Means of implementation

(a) Financing and cost evaluation

6.42. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $3 billion, including about $115 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

6.43. Although technology to prevent or abate pollution is readily available for a large number of problems, for programme and policy development countries should undertake research within an intersectoral framework. Such efforts should include collaboration with the business sector. Cost/effect analysis and environmental impact assessment methods should be developed through cooperative international programmes and applied to the setting of priorities and strategies in relation to health and development.

6.44. In the activities listed in paragraph 6.41 (a) to (m) above, developing country efforts should be facilitated by access to and transfer of technology, know-how and information, from the repositories of such knowledge and technologies, in conformity with chapter 34.

(c) Human resource development

6.45. Comprehensive national strategies should be designed to overcome the lack of qualified human resources, which is a major impediment to progress in dealing with environmental health hazards. Training should include environmental and health officials at all levels from managers to inspectors. More emphasis needs to be placed on including the subject of environmental health in the curricula of secondary schools and universities and on educating the public.

(d) Capacity-building

6.46. Each country should develop the knowledge and practical skills to foresee and identify environmental health hazards, and the capacity to reduce the risks. Basic capacity requirements must include knowledge about environmental health problems and awareness on the part of leaders, citizens and specialists; operational mechanisms for intersectoral and intergovernmental cooperation in development planning and management and in combating pollution; arrangements for involving private and community interests in dealing with social issues; delegation of authority and distribution of resources to intermediate and local levels of government to provide front-line capabilities to meet environmental health needs.

Notes

1/ A/45/625, annex.

2/ Report of the WHO Commission on Health and Environment (Geneva, forthcoming).

Chapter 7

PROMOTING SUSTAINABLE HUMAN SETTLEMENT DEVELOPMENT

INTRODUCTION

7.1. In industrialized countries, the consumption patterns of cities are severely stressing the global ecosystem, while settlements in the developing world need more raw material, energy, and economic development simply to overcome basic economic and social problems. Human settlement conditions in many parts of the world, particularly the developing countries, are deteriorating mainly as a result of the low levels of investment in the sector attributable to the overall resource constraints in these countries. In the low-income countries for which recent data are available, an average of only 5.6 per cent of central government expenditure went to housing, amenities, social security and welfare. 1/ Expenditure by international support and finance organizations is equally low. For example, only 1 per cent of the United Nations system's total grant-financed expenditures in 1988 went to human settlements, 2/ while in 1991, loans from the World Bank and the International Development Association (IDA) for urban development and water supply and sewerage amounted to 5.5 and 5.4 per cent, respectively, of their total lending. 3/

7.2. On the other hand, available information indicates that technical cooperation activities in the human settlement sector generate considerable public and private sector investment. For example, every dollar of UNDP technical cooperation expenditure on human settlements in 1988 generated a follow-up investment of $122, the highest of all UNDP sectors of assistance. 4/

7.3. This is the foundation of the "enabling approach" advocated for the human settlement sector. External assistance will help to generate the internal resources needed to improve the living and working environments of all people by the year 2000 and beyond, including the growing number of unemployed - the no-income group. At the same time the environmental implications of urban development should be recognized and addressed in an integrated fashion by all countries, with high priority being given to the needs of the urban and rural poor, the unemployed and the growing number of people without any source of income.

Human settlement objective

7.4. The overall human settlement objective is to improve the social, economic and environmental quality of human settlements and the living and working environments of all people, in particular the urban and rural poor. Such improvement should be based on technical cooperation activities, partnerships among the public, private and community sectors and participation in the decision-making process by community groups and special interest groups such as women, indigenous people, the elderly and the disabled. These approaches should form the core principles of national settlement strategies. In developing these strategies, countries will need to set priorities among the eight programme areas in this chapter in accordance with their national plans and objectives, taking fully into account their social and cultural capabilities. Furthermore, countries should make appropriate provision to monitor the impact of their strategies on marginalized and disenfranchised groups, with particular reference to the needs of women.

7.5. The programme areas included in this chapter are:

(a) Providing adequate shelter for all;

(b) Improving human settlement management;

(c) Promoting sustainable land-use planning and management;

(d) Promoting the integrated provision of environmental infrastructure: water, sanitation, drainage and solid-waste management;

(e) Promoting sustainable energy and transport systems in human settlements;

(f) Promoting human settlement planning and management in disaster-prone areas;

(g) Promoting sustainable construction industry activities;

(h) Promoting human resource development and capacity-building for human settlement development.

PROGRAMME AREAS

A. Providing adequate shelter for all

Basis for action

7.6. Access to safe and healthy shelter is essential to a person's physical, psychological, social and economic well-being and should be a fundamental part of national and international action. The right to adequate housing as a basic human right is enshrined in the Universal Declaration of Human Rights and the International Covenant on Economic, Social and Cultural Rights. Despite this, it is estimated that at the present time, at least 1 billion people do not have access to safe and healthy shelter and that if appropriate action is not taken, this number will increase dramatically by the end of the century and beyond.

7.7. A major global programme to address this problem is the Global Strategy for Shelter to the Year 2000, adopted by the General Assembly in December 1988 (resolution 43/181, annex). Despite its widespread endorsement, the Strategy needs a much greater level of political and financial support to enable it to reach its goal of facilitating adequate shelter for all by the end of the century and beyond.

Objective

7.8. The objective is to achieve adequate shelter for rapidly growing populations and for the currently deprived urban and rural poor through an enabling approach to shelter development and improvement that is environmentally sound.

Activities

7.9. The following activities should be undertaken:

(a) As a first step towards the goal of providing adequate shelter for all, all countries should take immediate measures to provide shelter to their homeless poor, while the international community and financial institutions should undertake actions to support the efforts of the developing countries to provide shelter to the poor;

(b) All countries should adopt and/or strengthen national shelter strategies, with targets based, as appropriate, on the principles and recommendations contained in the Global Strategy for Shelter to the Year 2000. People should be protected by law against unfair eviction from their homes or land;

(c) All countries should, as appropriate, support the shelter efforts of the urban and rural poor, the unemployed and the no-income group by adopting and/or adapting existing codes and regulations, to facilitate their access to land, finance and low-cost building materials and by actively promoting the regularization and upgrading of informal settlements and urban slums as an expedient measure and pragmatic solution to the urban shelter deficit;

(d) All countries should, as appropriate, facilitate access of urban and rural poor to shelter by adopting and utilizing housing and finance schemes and new innovative mechanisms adapted to their circumstances;

(e) All countries should support and develop environmentally compatible shelter strategies at national, state/provincial and municipal levels through partnerships among the private, public and community sectors and with the support of community-based organizations;

(f) All countries, especially developing ones, should, as appropriate, formulate and implement programmes to reduce the impact of the phenomenon of rural to urban drift by improving rural living conditions;

(g) All countries, where appropriate, should develop and implement resettlement programmes that address the specific problems of displaced populations in their respective countries;

(h) All countries should, as appropriate, document and monitor the implementation of their national shelter strategies by using, inter alia, the monitoring guidelines adopted by the Commission on Human Settlements and the shelter performance indicators being produced jointly by the United Nations Centre for Human Settlements (Habitat) and the World Bank;

(i) Bilateral and multilateral cooperation should be strengthened in order to support the implementation of the national shelter strategies of developing countries;

(j) Global progress reports covering national action and the support activities of international organizations and bilateral donors should be produced and disseminated on a biennial basis, as requested in the Global Strategy for Shelter to the Year 2000.

Means of implementation

(a) Financing and cost evaluation

7.10. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $75 billion, including about $10 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

7.11. The requirements under this heading are addressed in each of the other programme areas included in the present chapter.

(c) Human resource development and capacity-building

7.12. Developed countries and funding agencies should provide specific assistance to developing countries in adopting an enabling approach to the provision of shelter for all, including the no-income group, and covering research institutions and training activities for government officials, professionals, communities and non-governmental organizations and by strengthening local capacity for the development of appropriate technologies.

B. Improving human settlement management

Basis for action

7.13. By the turn of the century, the majority of the world's population will be living in cities. While urban settlements, particularly in developing countries, are showing many of the symptoms of the global environment and development crisis, they nevertheless generate 60 per cent of gross national product and, if properly managed, can develop the capacity to sustain their productivity, improve the living conditions of their residents and manage natural resources in a sustainable way.

7.14. Some metropolitan areas extend over the boundaries of several political and/or administrative entities (counties and municipalities) even though they conform to a continuous urban system. In many cases this political heterogeneity hinders the implementation of comprehensive environmental management programmes.

Objective

7.15. The objective is to ensure sustainable management of all urban settlements, particularly in developing countries, in order to enhance their ability to improve the living conditions of residents, especially the marginalized and disenfranchised, thereby contributing to the achievement of national economic development goals.

Activities

(a) Improving urban management

7.16. One existing framework for strengthening management is in the United Nations Development Programme/World Bank/United Nations Centre for Human Settlements (Habitat) Urban Management Programme (UMP), a concerted global effort to assist developing countries in addressing urban management issues. Its coverage should be extended to all interested countries during the period 1993-2000. All countries should, as appropriate and in accordance with national plans, objectives and priorities and with the assistance of non-governmental organizations and representatives of local authorities, undertake the following activities at the national, state/provincial and local levels, with the assistance of relevant programmes and support agencies:

(a) Adopting and applying urban management guidelines in the areas of land management, urban environmental management, infrastructure management and municipal finance and administration;

(b) Accelerating efforts to reduce urban poverty through a number of actions, including:

(i) Generating employment for the urban poor, particularly women, through the provision, improvement and maintenance of urban infrastructure and services and the support of economic activities in the informal sector, such as repairs, recycling, services and small commerce;

(ii) Providing specific assistance to the poorest of the urban poor through, *inter alia*, the creation of social infrastructure in order to reduce hunger and homelessness, and the provision of adequate community services;

(iii) Encouraging the establishment of indigenous community-based organizations, private voluntary organizations and other forms of non-governmental entities that can contribute to the efforts to reduce poverty and improve the quality of life for low-income families;

(c) Adopting innovative city planning strategies to address environmental and social issues by:

(i) Reducing subsidies on, and recovering the full costs of, environmental and other services of high standard (e.g. water supply, sanitation, waste collection, roads, telecommunications) provided to higher income neighbourhoods;

(ii) Improving the level of infrastructure and service provision in poorer urban areas;

(d) Developing local strategies for improving the quality of life and the environment, integrating decisions on land use and land management, investing in the public and private sectors and mobilizing human and material resources, thereby promoting employment generation that is environmentally sound and protective of human health.

(b) Strengthening urban data systems

7.17. During the period 1993-2000 all countries should undertake, with the active participation of the business sector as appropriate, pilot projects in selected cities for the collection, analysis and subsequent dissemination of urban data, including environmental impact analysis, at the local, state/provincial, national and international levels and the establishment of city data management capabilities. 5/ United Nations organizations, such as Habitat, UNEP and UNDP, could provide technical advice and model data management systems.

(c) Encouraging intermediate city development

7.18. In order to relieve pressure on large urban agglomerations of developing countries, policies and strategies should be implemented towards the development of intermediate cities that create employment opportunities for unemployed labour in the rural areas and support rural-based economic activities, although sound urban management is essential to ensure that urban sprawl does not expand resource degradation over an ever wider land area and increase pressures to convert open space and agricultural/buffer lands for development.

7.19. Therefore all countries should, as appropriate, conduct reviews of urbanization processes and policies in order to assess the environmental impacts of growth and apply urban planning and management approaches specifically suited to the needs, resource capabilities and characteristics of their growing intermediate-sized cities. As appropriate, they should also concentrate on activities aimed at facilitating the transition from rural to urban lifestyles and settlement patterns and at promoting the development of small-scale economic activities, particularly the production of food, to support local income generation and the production of intermediate goods and services for rural hinterlands.

7.20. All cities, particularly those characterized by severe sustainable development problems, should, in accordance with national laws, rules and regulations, develop and strengthen programmes aimed at addressing such problems and guiding their development along a sustainable path. Some international initiatives in support of such efforts, as in the Sustainable Cities Programme of Habitat and the Healthy Cities Programme of WHO, should be intensified. Additional initiatives involving the World Bank, the regional development banks and bilateral agencies, as well as other interested stakeholders, particularly international and national representatives of local authorities, should be strengthened and coordinated. Individual cities should, as appropriate:

(a) Institutionalize a participatory approach to sustainable urban development, based on a continuous dialogue between the actors involved in urban development (the public sector, private sector and communities), especially women and indigenous people;

(b) Improve the urban environment by promoting social organization and environmental awareness through the participation of local communities in the identification of public services needs, the provision of urban infrastructure, the enhancement of public amenities and the protection and/or rehabilitation of older buildings, historic precincts and other cultural artifacts. In addition, "green works" programmes should be activated to create self-sustaining human development activities and both formal and informal employment opportunities for low-income urban residents;

(c) Strengthen the capacities of their local governing bodies to deal more effectively with the broad range of developmental and environmental challenges associated with rapid and sound urban growth through comprehensive approaches to planning that recognize the individual needs of cities and are based on ecologically sound urban design practices;

(d) Participate in international "sustainable city networks" to exchange experiences and mobilize national and international technical and financial support;

(e) Promote the formulation of environmentally sound and culturally sensitive tourism programmes as a strategy for sustainable development of urban and rural settlements and as a way of decentralizing urban development and reducing discrepancies among regions;

(f) Establish mechanisms, with the assistance of relevant international agencies, to mobilize resources for local initiatives to improve environmental quality;

(g) Empower community groups, non-governmental organizations and individuals to assume the authority and responsibility for managing and enhancing their immediate environment through participatory tools, techniques and approaches embodied in the concept of environmental care.

7.21. Cities of all countries should reinforce cooperation among themselves and cities of the developed countries, under the aegis of non-governmental organizations active in this field, such as the International Union of Local Authorities (IULA), the International Council for Local Environmental Initiatives (ICLEI) and the World Federation of Twin Cities.

Means of implementation

(a) Financing and cost evaluation

7.22. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $100 billion, including about $15 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Human resource development and capacity-building

7.23. Developing countries should, with appropriate international assistance, consider focusing on training and developing a cadre of urban managers, technicians, administrators and other relevant stakeholders who can successfully manage environmentally sound urban development and growth and are equipped with the skills necessary to analyse and adapt the innovative experiences of other cities. For this purpose, the full range of training methods - from formal education to the use of the mass media - should be utilized, as well as the "learning by doing" option.

7.24. Developing countries should also encourage technological training and research through joint efforts by donors, non-governmental organizations and private business in such areas as the reduction of waste, water quality, saving of energy, safe production of chemicals and less polluting transportation.

7.25. Capacity-building activities carried out by all countries, assisted as suggested above, should go beyond the training of individuals and functional groups to include institutional arrangements, administrative routines, inter-agency linkages, information flows and consultative processes.

7.26. In addition, international efforts, such as the Urban Management Programme, in cooperation with multilateral and bilateral agencies, should continue to assist the developing countries in their efforts to develop a participatory structure by mobilizing the human resources of the private sector, non-governmental organizations and the poor, particularly women and the disadvantaged.

C. Promoting sustainable land-use planning and management

Basis for action

7.27. Access to land resources is an essential component of sustainable low-impact lifestyles. Land resources are the basis for (human) living systems and provide soil, energy, water and the opportunity for all human activity. In rapidly growing urban areas, access to land is rendered increasingly difficult by the conflicting demands of industry, housing, commerce, agriculture, land tenure structures and the need for open spaces. Furthermore, the rising costs of urban land prevent the poor from gaining access to suitable land. In rural areas, unsustainable practices, such as the exploitation of marginal lands and the encroachment on forests and ecologically fragile areas by commercial interests and landless rural populations, result in environmental degradation, as well as in diminishing returns for impoverished rural settlers.

Objective

7.28. The objective is to provide for the land requirements of human settlement development through environmentally sound physical planning and land use so as to ensure access to land to all households and, where appropriate, the encouragement of communally and collectively owned and managed land. 6/ Particular attention should be paid to the needs of women and indigenous people for economic and cultural reasons.

Activities

7.29. All countries should consider, as appropriate, undertaking a comprehensive national inventory of their land resources in order to establish a land information system in which land resources will be classified according to their most appropriate uses and environmentally fragile or disaster-prone areas will be identified for special protection measures.

7.30. Subsequently, all countries should consider developing national land-resource management plans to guide land-resource development and utilization and, to that end, should:

(a) Establish, as appropriate, national legislation to guide the implementation of public policies for environmentally sound urban development, land utilization, housing and for the improved management of urban expansion;

(b) Create, where appropriate, efficient and accessible land markets that meet community development needs by, *inter alia*, improving land registry systems and streamlining procedures in land transactions;

(c) Develop fiscal incentives and land-use control measures, including land-use planning solutions for a more rational and environmentally sound use of limited land resources;

(d) Encourage partnerships among the public, private and community sectors in managing land resources for human settlements development;

(e) Strengthen community-based land-resource protection practices in existing urban and rural settlements;

(f) Establish appropriate forms of land tenure that provide security of tenure for all land-users, especially indigenous people, women, local communities, the low-income urban dwellers and the rural poor;

(g) Accelerate efforts to promote access to land by the urban and rural poor, including credit schemes for the purchase of land and for building/acquiring or improving safe and healthy shelter and infrastructure services;

(h) Develop and support the implementation of improved land-management practices that deal comprehensively with potentially competing land requirements for agriculture, industry, transport, urban development, green spaces, preserves and other vital needs;

(i) Promote understanding among policy makers of the adverse consequences of unplanned settlements in environmentally vulnerable areas and of the appropriate national and local land-use and settlements policies required for this purpose.

7.31. At the international level, global coordination of land-resource management activities should be strengthened by the various bilateral and multilateral agencies and programmes, such as UNDP, FAO, the World Bank, the regional development banks, other interested organizations and the UNDP/World Bank/Habitat Urban Management Programme, and action should be taken to promote the transfer of applicable experience on sustainable land-management practices to and among developing countries.

Means of implementation

(a) Financing and cost evaluation

7.32. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $3 billion, including about $300 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

7.33. All countries, particularly developing countries, alone or in regional or subregional groupings, should be given access to modern techniques of land-resource management, such as geographical information systems, satellite photography/imagery and other remote-sensing technologies.

(c) Human resource development and capacity-building

7.34. Environmentally focused training activities in sustainable land-resources planning and management should be undertaken in all countries, with developing countries being given assistance through international support and funding agencies in order to:

(a) Strengthen the capacity of national, state/provincial and local educational research and training institutions to provide formal training of land-management technicians and professionals;

(b) Facilitate the organizational review of government ministries and agencies responsible for land questions, in order to devise more efficient mechanisms of land-resource management, and carry out periodic in-service refresher courses for the managers and staff of such ministries and agencies in order to familiarize them with up-to-date land-resource-management technologies;

(c) Where appropriate, provide such agencies with modern equipment, such as computer hardware and software and survey equipment;

(d) Strengthen existing programmes and promote an international and interregional exchange of information and experience in land management through the establishment of professional associations in land-management sciences and related activities, such as workshops and seminars.

D. Promoting the integrated provision of environmental infrastructure: water, sanitation, drainage and solid-waste management

Basis for action

7.35. The sustainability of urban development is defined by many parameters relating to the availability of water supplies, air quality and the provision of environmental infrastructure for sanitation and waste management. As a result of the density of users, urbanization, if properly managed, offers unique opportunities for the supply of sustainable environmental infrastructure through adequate pricing policies, educational programmes and equitable access mechanisms that are economically and environmentally sound. In most developing countries, however, the inadequacy and lack of environmental infrastructure is responsible for widespread ill-health and a large number of preventable deaths each year. In those countries conditions are set to worsen due to growing needs that exceed the capacity of Governments to respond adequately.

7.36. An integrated approach to the provision of environmentally sound infrastructure in human settlements, in particular for the urban and rural poor, is an investment in sustainable development that can improve the quality of life, increase productivity, improve health and reduce the burden of investments in curative medicine and poverty alleviation.

7.37. Most of the activities whose management would be improved by an integrated approach, are covered in Agenda 21 as follows: chapter 6 (Protecting and promoting human health conditions), chapters 9 (Protecting the atmosphere), 18 (Protecting the quality and supply of freshwater resources) and 21 (Environmentally sound management of solid wastes and sewage-related issues).

Objective

7.38. The objective is to ensure the provision of adequate environmental infrastructure facilities in all settlements by the year 2025. The achievement of this objective would require that all developing countries incorporate in their national strategies programmes to build the necessary technical, financial and human resource capacity aimed at ensuring better integration of infrastructure and environmental planning by the year 2000.

Activities

7.39. All countries should assess the environmental suitability of infrastructure in human settlements, develop national goals for sustainable management of waste, and implement environmentally sound technology to ensure that the environment, human health and quality of life are protected. Settlement infrastructure and environmental programmes designed to promote an integrated human settlements approach to the planning, development, maintenance and management of environmental infrastructure (water supply, sanitation, drainage, solid-waste management) should be strengthened with the assistance of bilateral and multilateral agencies. Coordination among these agencies and with collaboration from international and national representatives of local authorities, the private sector and community groups should also be strengthened. The activities of all agencies engaged in providing environmental infrastructure should, where possible, reflect an ecosystem or metropolitan area approach to settlements and should include monitoring, applied research, capacity-building, transfer of appropriate technology and technical cooperation among the range of programme activities.

7.40. Developing countries should be assisted at the national and local levels in adopting an integrated approach to the provision of water supply, energy, sanitation, drainage and solid-waste management, and external funding agencies should ensure that this approach is applied in particular to environmental infrastructure improvement in informal settlements based on regulations and standards that take into account the living conditions and resources of the communities to be served.

7.41. All countries should, as appropriate, adopt the following principles for the provision of environmental infrastructure:

(a) Adopt policies that minimize if not altogether avoid environmental damage, whenever possible;

(b) Ensure that relevant decisions are preceded by environmental impact assessments and also take into account the costs of any ecological consequences;

(c) Promote development in accordance with indigenous practices and adopt technologies appropriate to local conditions;

(d) Promote policies aimed at recovering the actual cost of infrastructure services, while at the same time recognizing the need to find suitable approaches (including subsidies) to extend basic services to all households;

(e) Seek joint solutions to environmental problems that affect several localities.

7.42. The dissemination of information from existing programmes should be facilitated and encouraged among interested countries and local institutions.

Means of implementation

(a) Financing and cost evaluation

7.43. The Conference secretariat has estimated most of the costs of implementing the activities of this programme in other chapters. The secretariat estimates the average total annual cost (1993-2000) of technical assistance from the international community grant or concessional terms to be about $50 million. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

7.44. Scientific and technological means within the existing programmes should be coordinated wherever possible and should:

(a) Accelerate research in the area of integrated policies of environmental infrastructure programmes and projects based on cost/benefit analysis and overall environmental impact;

(b) Promote methods of assessing "effective demand", utilizing environment and development data as criteria for selecting technology.

(c) Human resource development and capacity-building

7.45. With the assistance and support of funding agencies, all countries should, as appropriate, undertake training and popular participation programmes aimed at:

(a) Raising awareness of the means, approaches and benefits of the provision of environmental infrastructure facilities, especially among indigenous people, women, low-income groups and the poor;

(b) Developing a cadre of professionals with adequate skills in integrated infrastructural service planning and maintenance of resource-efficient, environmentally sound and socially acceptable systems;

(c) Strengthening the institutional capacity of local authorities and administrators in the integrated provision of adequate infrastructure services in partnership with local communities and the private sector;

(d) Adopting appropriate legal and regulatory instruments, including cross-subsidy arrangements, to extend the benefits of adequate and affordable environmental infrastructure to unserved population groups, especially the poor.

E. Promoting sustainable energy and transport systems in human settlements

Basis for action

7.46. Most of the commercial and non-commercial energy produced today is used in and for human settlements, and a substantial percentage of it is used by the household sector. Developing countries are at present faced with the need to increase their energy production to accelerate development and raise the living standards of their populations, while at the same time reducing energy production costs and energy-related pollution. Increasing the efficiency of energy use to reduce its polluting effects and to promote the use of renewable energies must be a priority in any action taken to protect the urban environment.

7.47. Developed countries, as the largest consumers of energy, are faced with the need for energy planning and management, promoting renewable and alternate sources of energy, and evaluating the life-cycle costs of current systems and practices as a result of which many metropolitan areas are suffering from pervasive air quality problems related to ozone, particulate matters and carbon monoxide. The causes have much to do with technological inadequacies and with an increasing fuel consumption generated by inefficiencies, high demographic and industrial concentrations and a rapid expansion in the number of motor vehicles.

7.48. Transport accounts for about 30 per cent of commercial energy consumption and for about 60 per cent of total global consumption of liquid petroleum. In developing countries, rapid motorization and insufficient investments in urban-transport planning, traffic management and infrastructure, are creating increasing problems in terms of accidents and injury, health, noise, congestion and loss of productivity similar to those occurring in many developed countries. All of these problems have a severe impact on urban populations, particularly the low-income and no-income groups.

Objectives

7.49. The objectives are to extend the provision of more energy-efficient technology and alternative/renewable energy for human settlements and to reduce negative impacts of energy production and use on human health and on the environment.

Activities

7.50. The principal activities relevant to this programme area are included in chapter 9 (Protection of the atmosphere), programme area B, subprogramme 1 (Energy development, efficiency and consumption) and subprogramme 2 (Transportation).

7.51. A comprehensive approach to human settlements development should include the promotion of sustainable energy development in all countries, as follows:

(a) Developing countries, in particular, should:

(i) Formulate national action programmes to promote and support reafforestation and national forest regeneration with a view to achieving sustained provision of the biomass energy needs of the low-income groups in urban areas and the rural poor, in particular women and children;

(ii) Formulate national action programmes to promote integrated development of energy-saving and renewable energy technologies, particularly for the use of solar, hydro, wind and biomass sources;

(iii) Promote wide dissemination and commercialization of renewable energy technologies through suitable measures, inter alia, fiscal and technology transfer mechanisms;

(iv) Carry out information and training programmes directed at manufacturers and users in order to promote energy-saving techniques and energy-efficient appliances;

(b) International organizations and bilateral donors should:

(i) Support developing countries in implementing national energy programmes in order to achieve widespread use of energy-saving and renewable energy technologies, particularly the use of solar, wind, biomass and hydro sources;

(ii) Provide access to research and development results to increase energy-use efficiency levels in human settlements.

7.52. Promoting efficient and environmentally sound urban transport systems in all countries should be a comprehensive approach to urban-transport planning and management. To this end, all countries should:

(a) Integrate land-use and transportation planning to encourage development patterns that reduce transport demand;

(b) Adopt urban-transport programmes favouring high-occupancy public transport in countries, as appropriate;

(c) Encourage non-motorized modes of transport by providing safe cycleways and footways in urban and suburban centres in countries, as appropriate;

(d) Devote particular attention to effective traffic management, efficient operation of public transport and maintenance of transport infrastructure;

(e) Promote the exchange of information among countries and representatives of local and metropolitan areas;

(f) Re-evaluate the present consumption and production patterns in order to reduce the use of energy and national resources.

Means of implementation

(a) Financing and cost evaluation

7.53. The Conference secretariat has estimated the costs of implementing the activities of this programme in chapter 9 (Protection of the atmosphere).

(b) Human resource development and capacity-building

7.54. In order to enhance the skills of energy service and transport professionals and institutions, all countries should, as appropriate:

(a) Provide on-the-job and other training of government officials, planners, traffic engineers and managers involved in the energy-service and transport section;

(b) Raise public awareness of the environmental impacts of transport and travel behaviour through mass media campaigns and support for non-governmental and community initiatives promoting the use of non-motorized transport, shared driving and improved traffic safety measures;

(c) Strengthen regional, national, state/provincial, and private sector institutions that provide education and training on energy service and urban transport planning and management.

F. Promoting human settlement planning and management in disaster-prone areas

Basis for action

7.55. Natural disasters cause loss of life, disruption of economic activities and urban productivity, particularly for highly susceptible low-income groups, and environmental damage, such as loss of fertile agricultural land and contamination of water resources, and can lead to major resettlement of populations. Over the past two decades, they are estimated to have caused some 3 million deaths and affected 800 million people. Global economic losses have been estimated by the Office of the United Nations Disaster Relief Coordinator to be in the range of $30-50 billion per year.

7.56. The General Assembly, in resolution 44/236, proclaimed the 1990s as the International Decade for Natural Disaster Reduction. The goals of the Decade 7/ bear relevance to the objectives of the present programme area.

7.57. In addition, there is an urgent need to address the prevention and reduction of man-made disasters and/or disasters caused by, inter alia, industries, unsafe nuclear power generation and toxic wastes (see chapter 6 of Agenda 21).

Objective

7.58. The objective is to enable all countries, in particular those that are disaster-prone, to mitigate the negative impact of natural and man-made disasters on human settlements, national economies and the environment.

Activities

7.59. Three distinct areas of activity are foreseen under this programme area, namely, the development of a "culture of safety", pre-disaster planning and post-disaster reconstruction.

(a) Developing a culture of safety

7.60. To promote a "culture of safety" in all countries, especially those that are disaster-prone, the following activities should be carried out:

(a) Completing national and local studies on the nature and occurrence of natural disasters, their impact on people and economic activities, the effects of inadequate construction and land use in hazard-prone areas, and the social and economic advantages of adequate pre-disaster planning;

(b) Implementing nationwide and local awareness campaigns through all available media, translating the above knowledge into information easily comprehensible to the general public and to the populations directly exposed to hazards;

(c) Strengthening, and/or developing global, regional, national and local early warning systems to alert populations to impending disasters;

(d) Identifying industrially based environmental disaster areas at the national and international levels and implementing strategies aimed at the rehabilitation of these areas through, _inter alia_:

(i) Restructuring of the economic activities and promoting new job opportunities in environmentally sound sectors;

(ii) Promoting close collaboration between governmental and local authorities, local communities and non-governmental organizations and private business;

(iii) Developing and enforcing strict environmental control standards.

(b) _Developing pre-disaster planning_

7.61. Pre-disaster planning should form an integral part of human settlement planning in all countries. The following should be included:

(a) Undertaking complete multi-hazard research into risk and vulnerability of human settlements and settlement infrastructure, including water and sewerage, communication and transportation networks, as one type of risk reduction may increase vulnerability to another (e.g., an earthquake-resistant house made of wood will be more vulnerable to wind storms);

(b) Developing methodologies for determining risk and vulnerability within specific human settlements and incorporating risk and vulnerability reduction into the human settlement planning and management process;

(c) Redirecting inappropriate new development and human settlements to areas not prone to hazards;

(d) Preparing guidelines on location, design and operation of potentially hazardous industries and activities;

(e) Developing tools (legal, economic etc.) to encourage disaster-sensitive development, including means of ensuring that limitations on development options are not punitive to owners, or incorporate alternative means of compensation;

(f) Further developing and disseminating information on disaster-resistant building materials and construction technologies for buildings and public works in general;

(g) Developing training programmes for contractors and builders on disaster-resistant construction methods. Some programmes should be directed particularly to small enterprises, which build the great majority of housing and other small buildings in the developing countries, as well as to the rural populations, which build their own houses;

(h) Developing training programmes for emergency site managers, non-governmental organizations and community groups which cover all aspects of disaster mitigation, including urban search and rescue, emergency communications, early warning techniques, and pre-disaster planning;

(i) Developing procedures and practices to enable local communities to receive information about hazardous installations or situations in these areas, and facilitate their participation in early warning and disaster abatement and response procedures and plans;

(j) Preparing action plans for the reconstruction of settlements, especially the reconstruction of community life-lines.

(c) Initiating post-disaster reconstruction and rehabilitation planning

7.62. The international community, as a major partner in post-reconstruction and rehabilitation, should ensure that the countries involved derive the greatest benefits from the funds allocated by undertaking the following activities:

(a) Carrying out research on past experiences on the social and economic aspects of post-disaster reconstruction and adopting effective strategies and guidelines for post-disaster reconstruction, with particular focus on development-focused strategies in the allocation of scarce reconstruction resources, and on the opportunities that post-disaster reconstruction provides to introduce sustainable settlement patterns;

(b) Preparing and disseminating international guidelines for adaptation to national and local needs;

(c) Supporting efforts of national Governments to initiate contingency planning, with participation of affected communities, for post-disaster reconstruction and rehabilitation.

Means of implementation

(a) Financing and cost evaluation

7.63. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $50 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

7.64. Scientists and engineers specializing in this field in both developing and developed countries should collaborate with urban and regional planners in order to provide the basic knowledge and means to mitigate losses owing to disasters as well as environmentally inappropriate development.

(c) Human resource development and capacity-building

7.65. Developing countries should conduct training programmes on disaster-resistant construction methods for contractors and builders, who build the majority of housing in the developing countries. This should focus on the small business enterprises, which build the majority of housing in the developing countries.

7.66. Training programmes should be extended to government officials and planners and community and non-governmental organizations to cover all aspects of disaster mitigation, such as early warning techniques, pre-disaster planning and construction, post-disaster construction and rehabilitation.

G. Promoting sustainable construction industry activities

Basis for action

7.67. The activities of the construction sector are vital to the achievement of the national socio-economic development goals of providing shelter, infrastructure and employment. However, they can be a major source of environmental damage through depletion of the natural resource base, degradation of fragile eco-zones, chemical pollution and the use of building materials harmful to human health.

Objectives

7.68. The objectives are, first, to adopt policies and technologies and to exchange information on them in order to enable the construction sector to meet human settlement development goals, while avoiding harmful side-effects on human health and on the biosphere, and, second, to enhance the employment-generation capacity of the construction sector. Governments should work in close collaboration with the private sector in achieving these objectives.

Activities

7.69. All countries should, as appropriate and in accordance with national plans, objectives and priorities:

(a) Establish and strengthen indigenous building materials industry, based, as much as possible, on inputs of locally available natural resources;

(b) Formulate programmes to enhance the utilization of local materials by the construction sector by expanding technical support and incentive schemes for increasing the capabilities and economic viability of small-scale and informal operatives which make use of these materials and traditional construction techniques;

(c) Adopt standards and other regulatory measures which promote the increased use of energy-efficient designs and technologies and sustainable utilization of natural resources in an economically and environmentally appropriate way;

(d) Formulate appropriate land-use policies and introduce planning regulations specially aimed at the protection of eco-sensitive zones against physical disruption by construction and construction-related activities;

(e) Promote the use of labour-intensive construction and maintenance technologies which generate employment in the construction sector for the underemployed labour force found in most large cities, while at the same time promoting the development of skills in the construction sector;

(f) Develop policies and practices to reach the informal sector and self-help housing builders by adopting measures to increase the affordability of building materials on the part of the urban and rural poor, through, inter alia, credit schemes and bulk procurement of building materials for sale to small-scale builders and communities.

7.70. All countries should:

(a) Promote the free exchange of information on the entire range of environmental and health aspects of construction, including the development and dissemination of databases on the adverse environmental effects of building materials through the collaborative efforts of the private and public sectors;

(b) Promote the development and dissemination of databases on the adverse environmental and health effects of building materials and introduce legislation and financial incentives to promote recycling of energy-intensive materials in the construction industry and conservation of waste energy in building-materials production methods;

(c) Promote the use of economic instruments, such as product charges, to discourage the use of construction materials and products that create pollution during their life cycle;

(d) Promote information exchange and appropriate technology transfer among all countries, with particular attention to developing countries, for resource management in construction, particularly for non-renewable resources;

(e) Promote research in construction industries and related activities, and establish and strengthen institutions in this sector.

Means of implementation

(a) Financing and cost evaluation

7.71. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $40 billion, including about $4 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Human resource development and capacity-building

7.72. Developing countries should be assisted by international support and funding agencies in upgrading the technical and managerial capacities of the small entrepreneur and the vocational skills of operatives and supervisors in the building materials industry, using a variety of training methods. These countries should also be assisted in developing programmes to encourage the use of non-waste and clean technologies through appropriate transfer of technology.

7.73. General education programmes should be developed in all countries, as appropriate, to increase builder awareness of available sustainable technologies.

7.74. Local authorities are called upon to play a pioneering role in promoting the increased use of environmentally sound building materials and construction technologies, e.g., by pursuing an innovative procurement policy.

H. Promoting human resource development and capacity-building for human settlements development

Basis for action

7.75. Most countries, in addition to shortcomings in the availability of specialized expertise in the areas of housing, settlement management, land management, infrastructure, construction, energy, transport, and pre-disaster planning and reconstruction, face three cross-sectoral human resource development and capacity-building shortfalls. First is the absence of an enabling policy environment capable of integrating the resources and activities of the public sector, the private sector and the community, or social sector; second is the weakness of specialized training and research institutions; and third is the insufficient capacity for technical training and assistance for low-income communities, both urban and rural.

Objective

7.76. The objective is to improve human resource development and capacity-building in all countries by enhancing the personal and institutional capacity of all actors, particularly indigenous people and women, involved in human settlement development. In this regard, account should be taken of traditional cultural practices of indigenous people and their relationship to the environment.

Activities

7.77. Specific human resource development and capacity-building activities have been built into each of the programme areas of this chapter. More generally, however, additional steps should be taken to reinforce those activities. In order to do so, all countries, as appropriate, should take the following action:

(a) Strengthening the development of human resources and of capacities of public sector institutions through technical assistance and international cooperation so as to achieve by the year 2000 substantial improvement in the efficiency of governmental activities;

(b) Creating an enabling policy environment supportive of the partnership between the public, private and community sectors;

(c) Providing enhanced training and technical assistance to institutions providing training for technicians, professionals and administrators, and appointed, elected and professional members of local governments and strengthening their capacity to address priority training needs, particularly in regard to social, economic and environmental aspects of human settlements development;

(d) Providing direct assistance for human settlement development at the community level, *inter alia*, by:

(i) Strengthening and promoting programmes for social mobilization and raising awareness of the potential of women and youth in human settlements activities;

(ii) Facilitating coordination of the activities of women, youth, community groups and non-governmental organizations in human settlements development;

(iii) Promoting research on women's programmes and other groups, and evaluating progress made with a view to identifying bottlenecks and needed assistance;

(e) Promoting the inclusion of integrated environmental management into general local government activities.

7.78. Both international organizations and non-governmental organizations should support the above activities by, inter alia, strengthening subregional training institutions, providing updated training materials and disseminating the results of successful human resource and capacity-building activities, programmes and projects.

Means of implementation

(a) Financing and cost evaluation

7.79. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $65 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

7.80. Both formal training and non-formal types of human resource development and capacity-building programmes should be combined, and use should be made of user-oriented training methods, up-to-date training materials and modern audio-visual communication systems.

Notes

1/ No aggregate figures are available on internal expenditure or official development assistance on human settlements. However, data available in the World Development Report, 1991, for 16 low-income developing countries show that the percentage of central government expenditure on housing, amenities and social security and welfare for 1989 averaged 5.6 per cent, with a high of 15.1 per cent in the case of Sri Lanka, which has embarked on a vigorous housing programme. In OECD industrialized countries, during the same year, the percentage of central government expenditure on housing, amenities and social security and welfare ranged from a minimum of 29.3 per cent to a maximum of 49.4 per cent, with an average of 39 per cent (World Bank, World Development Report, 1991, World Development Indicators, table 11 (Washington, D.C., 1991)).

2/ See the report of the Director-General for Development and International Economic Cooperation containing preliminary statistical data on operational activities of the United Nations system for 1988 (A/44/324-E/1989/106/Add.4, annex).

3/ World Bank, Annual Report, 1991 (Washington, D.C., 1991).

4/ UNDP, "Reported investment commitments related to UNDP-assisted projects, 1988", table 1, "Sectoral distribution of investment commitment in 1988-1989".

5/ A pilot programme of this type, the City Data Programme (CDP), is already in operation in the United Nations Centre on Human Settlements (Habitat) aimed at the production and dissemination to participating cities of microcomputer application software designed to store, process and retrieve city data for local, national and international exchange and dissemination.

6/ This calls for integrated land-resource management policies, which are also addressed in chapter 10 of Agenda 21 (Integrated approach to planning and management of land resources).

7/ The goals of the International Decade for Natural Disaster Reduction, set out in the annex to General Assembly resolution 44/236, are as follows:

(a) To improve the capacity of each country to mitigate the effects of natural disasters expeditiously and effectively, paying special attention to assisting developing countries in the assessment of disaster damage potential and in the establishment of early warning systems and disaster-resistant structures when and where needed;

(b) To devise appropriate guidelines and strategies for applying existing scientific and technical knowledge, taking into account the cultural and economic diversity among nations;

(c) To foster scientific and engineering endeavours aimed at closing critical gaps in knowledge in order to reduce loss of life and property;

(d) To disseminate existing and new technical information related to measures for the assessment, prediction and mitigation of natural disasters;

(e) To develop measures for the assessment, prediction, prevention and mitigation of natural disasters through programmes of technical assistance and technology transfer, demonstration projects, and education and training, tailored to specific disasters and locations, and to evaluate the effectiveness of those programmes.

Chapter 8

INTEGRATING ENVIRONMENT AND DEVELOPMENT IN DECISION-MAKING

INTRODUCTION

8.1. This chapter contains the following programme areas:

(a) Integrating environment and development at the policy, planning and management levels;

(b) Providing an effective legal and regulatory framework;

(c) Making effective use of economic instruments and market and other incentives;

(d) Establishing systems for integrated environmental and economic accounting.

PROGRAMME AREAS

A. Integrating environment and development at the policy, planning and management levels

Basis for action

8.2. Prevailing systems for decision-making in many countries tend to separate economic, social and environmental factors at the policy, planning and management levels. This influences the actions of all groups in society, including Governments, industry and individuals, and has important implications for the efficiency and sustainability of development. An adjustment or even a fundamental reshaping of decision-making, in the light of country-specific conditions, may be necessary if environment and development is to be put at the centre of economic and political decision-making, in effect achieving a full integration of these factors. In recent years, some Governments have also begun to make significant changes in the institutional structures of government in order to enable more systematic consideration of the environment when decisions are made on economic, social, fiscal, energy, agricultural, transportation, trade and other policies, as well as the implications of policies in these areas for the environment. New forms of dialogue are also being developed for achieving better integration among national and local government, industry, science, environmental groups and the public in the process of developing effective approaches to environment and development. The responsibility for bringing about changes lies with Governments in partnership with the private sector and local authorities, and in collaboration with national, regional and international organizations, including in particular UNEP, UNDP and the World Bank. Exchange of experience between countries can also be significant. National plans, goals and objectives, national rules, regulations and law, and the specific situation in which different countries are placed are the overall framework in which such integration takes place. In this context, it must be borne in mind that environmental standards may pose severe economic and social costs if they are uniformly applied in developing countries.

Objectives

8.3. The overall objective is to improve or restructure the decision-making process so that consideration of socio-economic and environmental issues is fully integrated and a broader range of public participation assured. Recognizing that countries will develop their own priorities in accordance with their prevailing conditions, needs, national plans, policies and programmes, the following objectives are proposed:

(a) To conduct a national review of economic, sectoral and environmental policies, strategies and plans to ensure the progressive integration of environmental and developmental issues;

(b) To strengthen institutional structures to allow the full integration of environmental and developmental issues, at all levels of decision-making;

(c) To develop or improve mechanisms to facilitate the involvement of concerned individuals, groups and organizations in decision-making at all levels;

(d) To establish domestically determined procedures to integrate environment and development issues in decision-making.

Activities

(a) Improving decision-making processes

8.4. The primary need is to integrate environmental and developmental decision-making processes. To do this, Governments should conduct a national review and, where appropriate, improve the processes of decision-making so as to achieve the progressive integration of economic, social and environmental issues in the pursuit of development that is economically efficient, socially equitable and responsible and environmentally sound. Countries will develop their own priorities in accordance with their national plans, policies and programmes for the following activities:

(a) Ensuring the integration of economic, social and environmental considerations in decision-making at all levels and in all ministries;

(b) Adopting a domestically formulated policy framework that reflects a long-term perspective and cross-sectoral approach as the basis for decisions, taking account of the linkages between and within the various political, economic, social and environmental issues involved in the development process;

(c) Establishing domestically determined ways and means to ensure the coherence of sectoral, economic, social and environmental policies, plans and policy instruments, including fiscal measures and the budget; these mechanisms should apply at various levels and bring together those interested in the development process;

(d) Monitoring and evaluating the development process systematically, conducting regular reviews of the state of human resources development, economic and social conditions and trends, the state of the environment and natural resources; this could be complemented by annual environment and development reviews, with a view to assessing sustainable development achievements by the various sectors and departments of government;

(e) Ensuring transparency of, and accountability for, the environmental implications of economic and sectoral policies;

(f) Ensuring access by the public to relevant information, facilitating the reception of public views and allowing for effective participation.

(b) Improving planning and management systems

8.5. To support a more integrated approach to decision-making, the data systems and analytical methods used to support such decision-making processes may need to be improved. Governments, in collaboration, where appropriate, with national and international organizations, should review the status of the planning and management system and, where necessary, modify and strengthen procedures so as to facilitate the integrated consideration of social, economic and environmental issues. Countries will develop their own priorities in accordance with their national plans, policies and programmes for the following activities:

(a) Improving the use of data and information at all stages of planning and management, making systematic and simultaneous use of social, economic, developmental, ecological and environmental data; analysis should stress interactions and synergisms; a broad range of analytical methods should be encouraged so as to provide various points of view;

(b) Adopting comprehensive analytical procedures for prior and simultaneous assessment of the impacts of decisions, including the impacts within and among the economic, social and environmental spheres; these procedures should extend beyond the project level to policies and programmes; analysis should also include assessment of costs, benefits and risks;

(c) Adopting flexible and integrative planning approaches that allow the consideration of multiple goals and enable adjustment of changing needs; integrative area approaches at the ecosystem or watershed level can assist in this approach;

(d) Adopting integrated management systems, particularly for the management of natural resources; traditional or indigenous methods should be studied and considered wherever they have proved effective; women's traditional roles should not be marginalized as a result of the introduction of new management systems;

(e) Adopting integrated approaches to sustainable development at the regional level, including transboundary areas, subject to the requirements of particular circumstances and needs;

(f) Using policy instruments (legal/regulatory and economic) as a tool for planning and management, seeking incorporation of efficiency criteria in decisions; instruments should be regularly reviewed and adapted to ensure that they continue to be effective;

(g) Delegating planning and management responsibilities to the lowest level of public authority consistent with effective action; in particular the advantages of effective and equitable opportunities for participation by women should be discussed;

(h) Establishing procedures for involving local communities in contingency planning for environmental and industrial accidents, and maintaining an open exchange of information on local hazards.

(c) Data and information

8.6. Countries could develop systems for monitoring and evaluation of progress towards achieving sustainable development by adopting indicators that measure changes across economic, social and environmental dimensions.

(d) Adopting a national strategy for sustainable development

8.7. Governments, in cooperation, where appropriate, with international organizations, should adopt a national strategy for sustainable development based on, inter alia, the implementation of decisions taken at the Conference, particularly in respect of Agenda 21. This strategy should build upon and harmonize the various sectoral economic, social and environmental policies and plans that are operating in the country. The experience gained through existing planning exercises such as national reports for the Conference, national conservation strategies and environment action plans should be fully used and incorporated into a country-driven sustainable development strategy. Its goals should be to ensure socially responsible economic development while protecting the resource base and the environment for the benefit of future generations. It should be developed through the widest possible participation. It should be based on a thorough assessment of the current situation and initiatives.

Means of implementation

(a) Financing and cost evaluation

8.8. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $50 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Researching environment and development interactions

8.9. Governments, in collaboration with the national and international scientific community and in cooperation with international organizations, as appropriate, should intensify efforts to clarify the interactions between and within social, economic and environmental considerations. Research should be undertaken with the explicit objective of assisting policy decisions and providing recommendations on improving management practices.

(c) Enhancing education and training

8.10. Countries, in cooperation, where appropriate, with national, regional or international organizations, should ensure that essential human resources exist, or be developed, to undertake the integration of environment and development at various stages of the decision-making and implementation process. To do this, they should improve education and technical training, particularly for women and girls, by including interdisciplinary approaches, as appropriate, in technical, vocational, university and other curricula. They should also undertake systematic training of government personnel, planners and managers on a regular basis, giving priority to the requisite integrative approaches and planning and management techniques that are suited to country-specific conditions.

(d) Promoting public awareness

8.11. Countries, in cooperation with national institutions and groups, the media and the international community, should promote awareness in the public at large, as well as in specialized circles, of the importance of considering environment and development in an integrated manner, and should establish mechanisms for facilitating a direct exchange of information and views with the public. Priority should be given to highlighting the responsibilities and potential contributions of different social groups.

(e) Strengthen national institutional capacity

8.12. Governments, in cooperation, where appropriate, with international organizations, should strengthen national institutional capability and capacity to integrate social, economic, developmental and environmental issues at all levels of development decision-making and implementation. Attention should be given to moving away from narrow sectoral approaches, progressing towards full cross-sectoral coordination and cooperation.

B. Providing an effective legal and regulatory framework

Basis for action

8.13. Laws and regulations suited to country-specific conditions are among the most important instruments for transforming environment and development policies into action, not only through "command and control" methods, but also as a normative framework for economic planning and market instruments. Yet, although the volume of legal texts in this field is steadily increasing, much of the law-making in many countries seems to be ad hoc and piecemeal, or has not been endowed with the necessary institutional machinery and authority for enforcement and timely adjustment.

8.14. While there is continuous need for law improvement in all countries, many developing countries have been affected by shortcomings of laws and regulations. To effectively integrate environment and development in the policies and practices of each country, it is essential to develop and implement integrated, enforceable and effective laws and regulations that are based upon sound social, ecological, economic and scientific principles. It is equally critical to develop workable programmes to review and enforce compliance with the laws, regulations and standards that are adopted. Technical support may be needed for many countries to accomplish these goals. Technical cooperation requirements in this field include legal information, advisory services and specialized training and institutional capacity-building.

8.15. The enactment and enforcement of laws and regulations (at the regional, national, state/provincial or local/municipal level) are also essential for the implementation of most international agreements in the field of environment and development, as illustrated by the frequent treaty obligation to report on legislative measures. The survey of existing agreements undertaken in the context of conference preparations has indicated problems of compliance in this respect, and the need for improved national implementation and, where appropriate, related technical assistance. In developing their national priorities, countries should take account of their international obligations.

Objectives

8.16. The overall objective is to promote, in the light of country-specific conditions, the integration of environment and development policies through appropriate legal and regulatory policies, instruments and enforcement mechanisms at the national, state, provincial and local level. Recognizing that countries will develop their own priorities in accordance with their needs and national and, where appropriate, regional plans, policies and programmes, the following objectives are proposed:

(a) To disseminate information on effective legal and regulatory innovations in the field of environment and development, including appropriate instruments and compliance incentives, with a view to encouraging their wider use and adoption at the national, state, provincial and local level;

(b) To support countries that request it in their national efforts to modernize and strengthen the policy and legal framework of governance for sustainable development, having due regard for local social values and infrastructures;

(c) To encourage the development and implementation of national, state, provincial and local programmes that assess and promote compliance and respond appropriately to non-compliance.

Activities

(a) Making laws and regulations more effective

8.17. Governments, with the support, where appropriate, of competent international organizations, should regularly assess the laws and regulations enacted and the related institutional/administrative machinery established at the national/state and local/municipal level in the field of environment and sustainable development, with a view to rendering them effective in practice. Programmes for this purpose could include the promotion of public awareness, preparation and distribution of guidance material, and specialized training, including workshops, seminars, education programmes and conferences, for public officials who design, implement, monitor and enforce laws and regulations.

(b) Establishing judicial and administrative procedures

8.18. Governments and legislators, with the support, where appropriate, of competent international organizations, should establish judicial and administrative procedures for legal redress and remedy of actions affecting environment and development that may be unlawful or infringe on rights under the law, and should provide access to individuals, groups and organizations with a recognized legal interest.

(c) Providing legal reference and support services

8.19. Competent intergovernmental and non-governmental organizations could cooperate to provide Governments and legislators, upon request, with an integrated programme of environment and development law (sustainable development law) services, carefully adapted to the specific requirements of the recipient legal and administrative systems. Such systems could usefully include assistance in the preparation of comprehensive inventories and reviews of national legal systems. Past experience has demonstrated the usefulness of combining specialized legal information services with legal expert advice. Within the United Nations system, closer cooperation among all agencies concerned would avoid duplication of databases and facilitate division of labour. These agencies could examine the possibility and merit of performing reviews of selected national legal systems.

(d) Establishing a cooperative training network for sustainable development law

8.20. Competent international and academic institutions could, within agreed frameworks, cooperate to provide, especially for trainees from developing countries, postgraduate programmes and in-service training facilities in environment and development law. Such training should address both the effective application and the progressive improvement of applicable laws, the related skills of negotiating, drafting and mediation, and the training of trainers. Intergovernmental and non-governmental organizations already active in this field could cooperate with related university programmes to harmonize curriculum planning and to offer an optimal range of options to interested Governments and potential sponsors.

(e) Developing effective national programmes for reviewing and enforcing compliance with national, state, provincial and local laws on environment and development

8.21. Each country should develop integrated strategies to maximize compliance with its laws and regulations relating to sustainable development, with assistance from international organizations and other countries as appropriate. The strategies could include:

(a) Enforceable, effective laws, regulations and standards that are based on sound economic, social and environmental principles and appropriate risk assessment, incorporating sanctions designed to punish violations, obtain redress and deter future violations;

(b) Mechanisms for promoting compliance;

(c) Institutional capacity for collecting compliance data, regularly reviewing compliance, detecting violations, establishing enforcement priorities, undertaking effective enforcement, and conducting periodic evaluations of the effectiveness of compliance and enforcement programmes;

(d) Mechanisms for appropriate involvement of individuals and groups in the development and enforcement of laws and regulations on environment and development.

(f) National monitoring of legal follow-up to international instruments

8.22. Contracting parties to international agreements, in consultation with the appropriate secretariats of relevant international conventions as appropriate, should improve practices and procedures for collecting information on legal and regulatory measures taken. Contracting parties to international agreements could undertake sample surveys of domestic follow-up action subject to agreement by the sovereign States concerned.

Means of implementation

(a) Financing and cost evaluation

8.23. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $6 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

8.24. The programme relies essentially on a continuation of ongoing work for legal data collection, translation and assessment. Closer cooperation between existing databases may be expected to lead to better division of labour (e.g., in geographical coverage of national legislative gazettes and other reference sources) and to improved standardization and compatibility of data, as appropriate.

(c) Human resource development

8.25. Participation in training is expected to benefit practitioners from developing countries and to enhance training opportunities for women. Demand for this type of postgraduate and in-service training is known to be high. The seminars, workshops and conferences on review and enforcement that have been held to date have been very successful and well attended. The purpose of these efforts is to develop resources (both human and institutional) to design and implement effective programmes to continuously review and enforce national and local laws, regulations and standards on sustainable development.

(d) Strengthening legal and institutional capacity

8.26. A major part of the programme should be oriented towards improving the legal-institutional capacities of countries to cope with national problems of governance and effective law-making and law-applying in the field of environment and sustainable development. Regional centres of excellence could be designated and supported to build up specialized databases and training facilities for linguistic/cultural groups of legal systems.

C. Making effective use of economic instruments and market and other incentives

Basis for action

8.27. Environmental law and regulation are important but cannot alone be expected to deal with the problems of environment and development. Prices, markets and governmental fiscal and economic policies also play a complementary role in shaping attitudes and behaviour towards the environment.

8.28. During the past several years, many Governments, primarily in industrialized countries but also in Central and Eastern Europe and in developing countries, have been making increasing use of economic approaches, including those that are market-oriented. Examples include the polluter-pays principle and the more recent natural-resource-user-pays concept.

8.29. Within a supportive international and national economic context and given the necessary legal and regulatory framework, economic and market-oriented approaches can in many cases enhance capacity to deal with the issues of environment and development. This would be achieved by providing cost-effective solutions, applying integrated pollution prevention control, promoting technological innovation and influencing environmental behaviour, as well as providing financial resources to meet sustainable development objectives.

8.30. What is needed is an appropriate effort to explore and make more effective and widespread use of economic and market-oriented approaches within a broad framework of development policies, law and regulation suited to country-specific conditions as part of a general transition to economic and environmental policies that are supportive and mutually reinforcing.

Objectives

8.31. Recognizing that countries will develop their own priorities in accordance with their needs and national plans, policies and programmes, the challenge is to achieve significant progress in the years ahead in meeting three fundamental objectives:

(a) To incorporate environmental costs in the decisions of producers and consumers, to reverse the tendency to treat the environment as a "free good" and to pass these costs on to other parts of society, other countries, or to future generations;

(b) To move more fully towards integration of social and environmental costs into economic activities, so that prices will appropriately reflect the relative scarcity and total value of resources and contribute towards the prevention of environmental degradation;

(c) To include, wherever appropriate, the use of market principles in the framing of economic instruments and policies to pursue sustainable development.

Activities

(a) Improving or reorienting governmental policies

8.32. In the near term, Governments should consider gradually building on experience with economic instruments and market mechanisms by undertaking to reorient their policies, keeping in mind national plans, priorities and objectives, in order to:

(a) Establish effective combinations of economic, regulatory and voluntary (self-regulatory) approaches;

(b) Remove or reduce those subsidies that do not conform with sustainable development objectives;

(c) Reform or recast existing structures of economic and fiscal incentives to meet environment and development objectives;

(d) Establish a policy framework that encourages the creation of new markets in pollution control and environmentally sounder resource management;

(e) Move towards pricing consistent with sustainable development objectives.

8.33. In particular, Governments should explore, in cooperation with business and industry, as appropriate, how effective use can be made of economic instruments and market mechanisms in the following areas:

(a) Issues related to energy, transportation, agriculture and forestry, water, wastes, health, tourism and tertiary services;

(b) Global and transboundary issues;

(c) The development and introduction of environmentally sound technology and its adaptation, diffusion and transfer to developing countries in conformity with chapter 34.

(b) Taking account of the particular circumstances of developing countries and countries with economies in transition

8.34. A special effort should be made to develop applications of the use of economic instruments and market mechanisms geared to the particular needs of developing countries and countries with economies in transition, with the assistance of regional and international economic and environmental organizations and, as appropriate, non-governmental research institutes, by:

(a) Providing technical support to those countries on issues relating to the application of economic instruments and market mechanisms;

(b) Encouraging regional seminars and, possibly, the development of regional centres of expertise.

(c) Creating an inventory of effective uses of economic instruments and market mechanisms

8.35. Given the recognition that the use of economic instruments and market mechanisms is relatively recent, exchange of information about different countries' experiences with such approaches should be actively encouraged. In this regard, Governments should encourage the use of existing means of information exchange to look at effective uses of economic instruments.

(d) Increasing understanding of the role of economic instruments and market mechanisms

8.36. Governments should encourage research and analysis on effective uses of economic instruments and incentives with the assistance and support of regional and international economic and environmental organizations, as well as non-governmental research institutes, with a focus on such key issues as:

(a) The role of environmental taxation suited to national conditions;

(b) The implications of economic instruments and incentives for competitiveness and international trade, and potential needs for appropriate future international cooperation and coordination;

(c) The possible social and distributive implications of using various instruments.

(e) Establishing a process for focusing on pricing

8.37. The theoretical advantages of using pricing policies, where appropriate, need to be better understood, and accompanied by greater understanding of what it means to take significant steps in this direction. Processes should therefore be initiated, in cooperation with business, industry, large enterprises, transnational corporations, as well as other social groups, as appropriate, at both the national and international levels, to examine:

(a) The practical implications of moving towards greater reliance on pricing that internalize environmental costs appropriate to help achieve sustainable development objectives;

(b) The implications for resource pricing in the case of resource-exporting countries, including the implications of such pricing policies for developing countries;

(c) The methodologies used in valuing environmental costs.

(f) Enhancing understanding of sustainable development economics

8.38. Increased interest in economic instruments, including market mechanisms, also requires a concerted effort to improve understanding of sustainable development economics by:

(a) Encouraging institutions of higher learning to review their curricula and strengthen studies in sustainable development economics;

(b) Encouraging regional and international economic organizations and non-governmental research institutes with expertise in this area to provide training sessions and seminars for government officials;

(c) Encouraging business and industry, including large industrial enterprises and transnational corporations with expertise in environmental matters, to organize training programmes for the private sector and other groups.

Means of implementation

8.39. This programme involves adjustments or reorientation of policies on the part of Governments. It also involves international and regional economic and environmental organizations and agencies with expertise in this area, including transnational corporations.

(a) Financing and cost evaluation

8.40. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $5 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

D. Establishing systems for integrated environmental and economic accounting

Basis for action

8.41. A first step towards the integration of sustainability into economic management is the establishment of better measurement of the crucial role of the environment as a source of natural capital and as a sink for by-products generated during the production of man-made capital and other human activities. As sustainable development encompasses social, economic and environmental dimensions, it is also important that national accounting procedures are not restricted to measuring the production of goods and services that are conventionally remunerated. A common framework needs to be developed whereby the contributions made by all sectors and activities of society, that are not included in the conventional national accounts, are included, to the extent consistent with sound theory and practicability, in satellite accounts. A programme to develop national systems of integrated environmental and economic accounting in all countries is proposed.

Objectives

8.42. The main objective is to expand existing systems of national economic accounts in order to integrate environment and social dimensions in the accounting framework, including at least satellite systems of accounts for natural resources in all member States. The resulting systems of integrated environmental and economic accounting (IEEA) to be established in all member States at the earliest date should be seen as a complement to, rather than a substitute for, traditional national accounting practices for the foreseeable future. IEEAs would be designed to play an integral part in the national development decision-making process. National accounting agencies should work in close collaboration with national environmental statistics as well as the geographic and natural resource departments. The definition of economically active could be expanded to include people performing productive but unpaid tasks in all countries. This would enable their contribution to be adequately measured and taken into account in decision-making.

Activities

(a) Strengthening international cooperation

8.43. The Statistical Office of the United Nations Secretariat should:

(a) Make available to all member States the methodologies contained in the SNA Handbook on Integrated Environmental and Economic Accounting;

(b) In collaboration with other relevant United Nations organizations, further develop, test, refine and then standardize the provisional concepts and methods such as those proposed by the SNA Handbook, keeping member States informed of the status of the work throughout this process;

(c) Coordinate, in close cooperation with other international organizations, the training of national accountants, environmental statisticians and national technical staff in small groups for the establishment, adaptation and development of national IEEAs.

8.44. The Department of Economic and Social Development of the United Nations Secretariat, in close collaboration with other relevant United Nations organizations, should:

(a) Support, in all member States, the utilization of sustainable development indicators in national economic and social planning and decision-making practices, with a view to ensuring that IEEAs are usefully integrated in economic development planning at the national level;

(b) Promote improved environmental and economic and social data collection.

(b) Strengthening national accounting systems

8.45. At the national level, the programme could be adopted mainly by the agencies dealing with national accounts, in close cooperation with environmental statistics and natural resource departments, with a view to assisting national economic analysts and decision makers in charge of national economic planning. National institutions should play a crucial role not only as the depositary of the system but also in its adaptation, establishment and continuous use. Unpaid productive work such as domestic work and child care should be included, where appropriate, in satellite national accounts and economic statistics. Time-use surveys could be a first step in the process of developing these satellite accounts.

(c) Establishing an assessment process

8.46. At the international level, the Statistical Commission should assemble and review experience and advise member States on technical and methodological issues related to the further development and implementation of IEEAs in member States.

8.47. Governments should seek to identify and consider measures to correct price distortions arising from environmental programmes affecting land, water, energy and other natural resources.

8.48. Governments should encourage corporations:

(a) To provide relevant environmental information through transparent reporting to shareholders, creditors, employees, governmental authorities, consumers and the public;

(b) To develop and implement methods and rules for accounting for sustaining development.

(d) Strengthening data and information collection

8.49. National Governments could consider implementing the necessary enhancement in data collection to set in place national IEEAs with a view to contributing pragmatically to sound economic management. Major efforts should be made to augment the capacity to collect and analyse environmental data and information and to integrate it with economic data, including gender disaggregated data. Efforts should also be made to develop physical environmental accounts. International donor agencies should consider financing the development of intersectoral data banks to help ensure that national planning for sustainable development is based on precise, reliable and effective information and is suited to national conditions.

(e) Strengthening technical cooperation

8.50. The Statistical Office of the United Nations Secretariat, in close collaboration with relevant United Nations organizations, should strengthen existing mechanisms for technical cooperation among countries. This should also include exchange of experience in the establishment of IEEAs, particularly in connection with the valuation of non-marketed natural resources and standardization in data collection. The cooperation of business and industry, including large industrial enterprises and transnational corporations with experience in valuation of such resources, should also be sought.

Means of implementation

(a) Financing and cost evaluation

8.51. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $2 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Strengthening institutions

8.52. To ensure the application of IEEAs:

(a) National institutions in developing countries could be strengthened to ensure the effective integration of environment and development at the planning and decision-making levels;

(b) The Statistical Office should provide the necessary technical support to member States, in close collaboration with the assessment process to be established by the Statistical Commission; the Statistical Office should provide appropriate support for establishing IEEAs, in collaboration with relevant United Nations agencies.

(c) Enhancing the use of information technology

8.53. Guidelines and mechanisms could be developed and agreed upon for the adaptation and diffusion of information technologies to developing countries. State-of-the-art data management technologies should be adopted for the most efficient and widespread use of IEEAs.

(d) Strengthening national capacity

8.54. Governments, with the support of the international community, should strengthen national institutional capacity to collect, store, organize, assess and use data in decision-making. Training in all areas related to the establishment of IEEAs, and at all levels, will be required, especially in developing countries. This should include technical training of those involved in economic and environmental analysis, data collection and national accounting, as well as training decision makers to use such information in a pragmatic and appropriate way.

SECTION II. CONSERVATION AND MANAGEMENT OF RESOURCES FOR DEVELOPMENT

Chapter 9

PROTECTION OF THE ATMOSPHERE

INTRODUCTION

9.1. Protection of the atmosphere is a broad and multidimensional endeavour involving various sectors of economic activity. The options and measures described in the present chapter are recommended for consideration and, as appropriate, implementation by Governments and other bodies in their efforts to protect the atmosphere.

9.2. It is recognized that many of the issues discussed in this chapter are also addressed in such international agreements as the 1985 Vienna Convention for the Protection of the Ozone Layer, the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer as amended, the 1992 United Nations Framework Convention on Climate Change and other international, including regional, instruments. In the case of activities covered by such agreements, it is understood that the recommendations contained in this chapter do not oblige any Government to take measures which exceed the provisions of these legal instruments. However, within the framework of this chapter, Governments are free to carry out additional measures which are consistent with those legal instruments.

9.3. It is also recognized that activities that may be undertaken in pursuit of the objectives of this chapter should be coordinated with social and economic development in an integrated manner with a view to avoiding adverse impacts on the latter, taking into full account the legitimate priority needs of developing countries for the achievement of sustained economic growth and the eradication of poverty.

9.4. In this context particular reference is also made to programme area A of chapter 2 of Agenda 21 (Promoting sustainable development through trade).

9.5. The present chapter includes the following four programme areas:

(a) Addressing the uncertainties: improving the scientific basis for decision-making;

(b) Promoting sustainable development:

(i) Energy development, efficiency and consumption;

(ii) Transportation;

(iii) Industrial development;

(iv) Terrestrial and marine resource development and land use;

(c) Preventing stratospheric ozone depletion;

(d) Transboundary atmospheric pollution.

PROGRAMME AREAS

A. Addressing the uncertainties: improving the scientific basis for decision-making

Basis for action

9.6. Concern about climate change and climate variability, air pollution and ozone depletion has created new demands for scientific, economic and social information to reduce the remaining uncertainties in these fields. Better understanding and prediction of the various properties of the atmosphere and of the affected ecosystems, as well as health impacts and their interactions with socio-economic factors, are needed.

Objectives

9.7. The basic objective of this programme area is to improve the understanding of processes that influence and are influenced by the Earth's atmosphere on a global, regional and local scale, including, *inter alia*, physical, chemical, geological, biological, oceanic, hydrological, economic and social processes; to build capacity and enhance international cooperation; and to improve understanding of the economic and social consequences of atmospheric changes and of mitigation and response measures addressing such changes.

Activities

9.8. Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental and non-governmental organizations, and the private sector, should:

(a) Promote research related to the natural processes affecting and being affected by the atmosphere, as well as the critical linkages between sustainable development and atmospheric changes, including impacts on human health, ecosystems, economic sectors and society;

(b) Ensure a more balanced geographical coverage of the Global Climate Observing System and its components, including the Global Atmosphere Watch, by facilitating, *inter alia*, the establishment and operation of additional systematic observation stations, and by contributing to the development, utilization and accessibility of these databases;

(c) Promote cooperation in:

(i) The development of early detection systems concerning changes and fluctuations in the atmosphere;

(ii) The establishment and improvement of capabilities to predict such changes and fluctuations and to assess the resulting environmental and socio-economic impacts;

(d) Cooperate in research to develop methodologies and identify threshold levels of atmospheric pollutants, as well as atmospheric levels of greenhouse gas concentrations, that would cause dangerous anthropogenic interference with the climate system and the environment as a whole, and the associated rates of change that would not allow ecosystems to adapt naturally;

(e) Promote, and cooperate in the building of scientific capacities, the exchange of scientific data and information, and the facilitation of the participation and training of experts and technical staff, particularly of developing countries, in the fields of research, data assembly, collection and assessment, and systematic observation related to the atmosphere.

B. Promoting sustainable development

1. Energy development, efficiency and consumption

Basis for action

9.9. Energy is essential to economic and social development and improved quality of life. Much of the world's energy, however, is currently produced and consumed in ways that could not be sustained if technology were to remain constant and if overall quantities were to increase substantially. The need to control atmospheric emissions of greenhouse and other gases and substances will increasingly need to be based on efficiency in energy production, transmission, distribution and consumption, and on growing reliance on environmentally sound energy systems, particularly new and renewable sources of energy. 1/ All energy sources will need to be used in ways that respect the atmosphere, human health and the environment as a whole.

9.10. The existing constraints to increasing the environmentally sound energy supplies required for pursuing the path towards sustainable development, particularly in developing countries, need to be removed.

Objectives

9.11. The basic and ultimate objective of this programme area is to reduce adverse effects on the atmosphere from the energy sector by promoting policies or programmes, as appropriate, to increase the contribution of environmentally sound and cost-effective energy systems, particularly new and renewable ones, through less polluting and more efficient energy production, transmission, distribution and use. This objective should reflect the need for equity, adequate energy supplies and increasing energy consumption in developing countries, and should take into consideration the situations of countries that are highly dependent on income generated from the production, processing and export, and/or consumption of fossil fuels and associated energy-intensive products and/or the use of fossil fuels for which countries have serious difficulties in switching to alternatives, and the situations of countries highly vulnerable to adverse effects of climate change.

Activities

9.12. Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental and non-governmental organizations, and the private sector, should:

(a) Cooperate in identifying and developing economically viable, environmentally sound energy sources to promote the availability of increased energy supplies to support sustainable development efforts, in particular in developing countries;

(b) Promote the development at the national level of appropriate methodologies for making integrated energy, environment and economic policy decisions for sustainable development, inter alia, through environmental impact assessments;

(c) Promote the research, development, transfer and use of improved energy-efficient technologies and practices, including endogenous technologies in all relevant sectors, giving special attention to the rehabilitation and modernization of power systems, with particular attention to developing countries;

(d) Promote the research, development, transfer and use of technologies and practices for environmentally sound energy systems, including new and renewable energy systems, with particular attention to developing countries;

(e) Promote the development of institutional, scientific, planning and management capacities, particularly in developing countries, to develop, produce and use increasingly efficient and less polluting forms of energy;

(f) Review current energy supply mixes to determine how the contribution of environmentally sound energy systems as a whole, particularly new and renewable energy systems, could be increased in an economically efficient manner, taking into account respective countries' unique social, physical, economic and political characteristics, and examining and implementing, where appropriate, measures to overcome any barriers to their development and use;

(g) Coordinate energy plans regionally and subregionally, where applicable, and study the feasibility of efficient distribution of environmentally sound energy from new and renewable energy sources;

(h) In accordance with national socio-economic development and environment priorities, evaluate and, as appropriate, promote cost-effective policies or programmes, including administrative, social and economic measures, in order to improve energy efficiency;

(i) Build capacity for energy planning and programme management in energy efficiency, as well as for the development, introduction, and promotion of new and renewable sources of energy;

(j) Promote appropriate energy efficiency and emission standards or recommendations at the national level, 2/ aimed at the development and use of technologies that minimize adverse impacts on the environment;

(k) Encourage education and awareness-raising programmes at the local, national, subregional and regional levels concerning energy efficiency and environmentally sound energy systems;

(l) Establish or enhance, as appropriate, in cooperation with the private sector, labelling programmes for products to provide decision makers and consumers with information on opportunities for energy efficiency.

2. Transportation

Basis for action

9.13. The transport sector has an essential and positive role to play in economic and social development, and transportation needs will undoubtedly increase. However, since the transport sector is also a source of atmospheric emissions, there is need for a review of existing transport systems and for more effective design and management of traffic and transport systems.

Objectives

9.14. The basic objective of this programme area is to develop and promote cost-effective policies or programmes, as appropriate, to limit, reduce or control, as appropriate, harmful emissions into the atmosphere and other adverse environmental effects of the transport sector, taking into account development priorities as well as the specific local and national circumstances and safety aspects.

Activities

9.15. Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental and non-governmental organizations, and the private sector, should:

(a) Develop and promote, as appropriate, cost-effective, more efficient, less polluting and safer transport systems, particularly integrated rural and urban mass transit, as well as environmentally sound road networks, taking into account the needs for sustainable social, economic and development priorities, particularly in developing countries;

(b) Facilitate at the international, regional, subregional and national levels access to and the transfer of safe, efficient, including resource-efficient, and less polluting transport technologies, particularly to the developing countries, including the implementation of appropriate training programmes;

(c) Strengthen, as appropriate, their efforts at collecting, analysing and exchanging relevant information on the relation between environment and transport, with particular emphasis on the systematic observation of emissions and the development of a transport database;

(d) In accordance with national socio-economic development and environment priorities, evaluate and, as appropriate, promote cost-effective policies or programmes, including administrative, social and economic measures, in order to encourage use of transportation modes that minimize adverse impacts on the atmosphere;

(e) Develop or enhance, as appropriate, mechanisms to integrate transport planning strategies and urban and regional settlement planning strategies, with a view to reducing the environmental impacts of transport;

(f) Study, within the framework of the United Nations and its regional commissions, the feasibility of convening regional conferences on transport and the environment.

3. Industrial development

Basis for action

9.16. Industry is essential for the production of goods and services and is a major source of employment and income, and industrial development as such is essential for economic growth. At the same time, industry is a major resource and materials user and consequently industrial activities result in emissions into the atmosphere and the environment as a whole. Protection of the atmosphere can be enhanced, *inter alia*, by increasing resource and materials efficiency in industry, installing or improving pollution abatement technologies and replacing chlorofluorocarbons (CFCs) and other ozone-depleting substances with appropriate substitutes, as well as by reducing wastes and by-products.

Objectives

9.17. The basic objective of this programme area is to encourage industrial development in ways that minimize adverse impacts on the atmosphere by, *inter alia*, increasing efficiency in the production and consumption by industry of all resources and materials, by improving pollution-abatement technologies and by developing new environmentally sound technologies.

Activities

9.18. Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental and non-governmental organizations, and the private sector, should:

(a) In accordance with national socio-economic development and environment priorities, evaluate and, as appropriate, promote cost-effective policies or programmes, including administrative, social and economic measures, in order to minimize industrial pollution and adverse impacts on the atmosphere;

(b) Encourage industry to increase and strengthen its capacity to develop technologies, products and processes that are safe, less polluting and make more efficient use of all resources and materials, including energy;

(c) Cooperate in the development and transfer of such industrial technologies and in the development of capacities to manage and use such technologies, particularly with respect to developing countries;

(d) Develop, improve and apply environmental impact assessments to foster sustainable industrial development;

(e) Promote efficient use of materials and resources, taking into account the life cycles of products, in order to realize the economic and environmental benefits of using resources more efficiently and producing fewer wastes;

(f) Support the promotion of less polluting and more efficient technologies and processes in industries, taking into account area-specific accessible potentials for energy, particularly safe and renewable sources of energy, with a view to limiting industrial pollution, and adverse impacts on the atmosphere.

4. Terrestrial and marine resource development and land use

Basis for action

9.19. Land-use and resource policies will both affect and be affected by changes in the atmosphere. Certain practices related to terrestrial and marine resources and land use can decrease greenhouse gas sinks and increase atmospheric emissions. The loss of biological diversity may reduce the resilience of ecosystems to climatic variations and air pollution damage. Atmospheric changes can have important impacts on forests, biodiversity, and freshwater and marine ecosystems, as well as on economic activities, such as agriculture. Policy objectives in different sectors may often diverge and will need to be handled in an integrated manner.

Objectives

9.20. The objectives of this programme area are:

(a) To promote terrestrial and marine resource utilization and appropriate land-use practices that contribute to:

- (i) The reduction of atmospheric pollution and/or the limitation of anthropogenic emissions of greenhouse gases;
- (ii) The conservation, sustainable management and enhancement, where appropriate, of all sinks for greenhouse gases;
- (iii) The conservation and sustainable use of natural and environmental resources;

(b) To ensure that actual and potential atmospheric changes and their socio-economic and ecological impacts are fully taken into account in planning and implementing policies and programmes concerning terrestrial and marine resources utilization and land-use practices.

Activities

9.21. Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental and non-governmental organizations, and the private sector, should:

(a) In accordance with national socio-economic development and environment priorities, evaluate and, as appropriate, promote cost-effective policies or programmes, including administrative, social and economic measures, in order to encourage environmentally sound land-use practices;

(b) Implement policies and programmes that will discourage inappropriate and polluting land-use practices and promote sustainable utilization of terrestrial and marine resources;

(c) Consider promoting the development and use of terrestrial and marine resources and land-use practices that will be more resilient to atmospheric changes and fluctuations;

(d) Promote sustainable management and cooperation in the conservation and enhancement, as appropriate, of sinks and reservoirs of greenhouse gases, including biomass, forests and oceans, as well as other terrestrial, coastal and marine ecosystems.

C. Preventing stratospheric ozone depletion

Basis for action

9.22. Analysis of recent scientific data has confirmed the growing concern about the continuing depletion of the Earth's stratospheric ozone layer by reactive chlorine and bromine from man-made CFCs, halons and related substances. While the 1985 Vienna Convention for the Protection of the Ozone Layer and the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer (as amended in London in 1990) were important steps in international action, the total chlorine loading of the atmosphere of ozone-depleting substances has continued to rise. This can be changed through compliance with the control measures identified within the Protocol.

Objectives

9.23. The objectives of this programme area are:

(a) To realize the objectives defined in the Vienna Convention and the Montreal Protocol and its 1990 amendments, including the consideration in those instruments of the special needs and conditions of the developing countries and the availability to them of alternatives to substances that deplete the ozone layer. Technologies and natural products that reduce demand for these substances should be encouraged;

(b) To develop strategies aimed at mitigating the adverse effects of ultraviolet radiation reaching the Earth's surface as a consequence of depletion and modification of the stratospheric ozone layer.

Activities

9.24. Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental and non-governmental organizations, and the private sector, should:

(a) Ratify, accept or approve the Montreal Protocol and its 1990 amendments; pay their contributions towards the Vienna/Montreal trust funds and the interim multilateral ozone fund promptly; and contribute, as appropriate, towards ongoing efforts under the Montreal Protocol and its implementing mechanisms, including making available substitutes for CFCs and other ozone-depleting substances and facilitating the transfer of the corresponding technologies to developing countries in order to enable them to comply with the obligations of the Protocol;

(b) Support further expansion of the Global Ozone Observing System by facilitating - through bilateral and multilateral funding - the establishment and operation of additional systematic observation stations, especially in the tropical belt in the southern hemisphere;

(c) Participate actively in the continuous assessment of scientific information and the health and environmental effects, as well as of the technological/economic implications of stratospheric ozone depletion; and consider further actions that prove warranted and feasible on the basis of these assessments;

(d) Based on the results of research on the effects of the additional ultraviolet radiation reaching the Earth's surface, consider taking appropriate remedial measures in the fields of human health, agriculture and marine environment;

(e) Replace CFCs and other ozone-depleting substances, consistent with the Montreal Protocol, recognizing that a replacement's suitability should be evaluated holistically and not simply based on its contribution to solving one atmospheric or environmental problem.

D. Transboundary atmospheric pollution

Basis for action

9.25. Transboundary air pollution has adverse health impacts on humans and other detrimental environmental impacts, such as tree and forest loss and the acidification of water bodies. The geographical distribution of atmospheric pollution monitoring networks is uneven, with the developing countries severely underrepresented. The lack of reliable emissions data outside Europe and North America is a major constraint to measuring transboundary air pollution. There is also insufficient information on the environmental and health effects of air pollution in other regions.

9.26. The 1979 Convention on Long-range Transboundary Air Pollution, and its protocols, have established a regional regime in Europe and North America, based on a review process and cooperative programmes for systematic observation of air pollution, assessment and information exchange. These programmes need to be continued and enhanced, and their experience needs to be shared with other regions of the world.

Objectives

9.27. The objectives of this programme area are:

(a) To develop and apply pollution control and measurement technologies for stationary and mobile sources of air pollution and to develop alternative environmentally sound technologies;

(b) To observe and assess systematically the sources and extent of transboundary air pollution resulting from natural processes and anthropogenic activities;

(c) To strengthen the capabilities, particularly of developing countries, to measure, model and assess the fate and impacts of transboundary air pollution, through, inter alia, exchange of information and training of experts;

(d) To develop capabilities to assess and mitigate transboundary air pollution resulting from industrial and nuclear accidents, natural disasters and the deliberate and/or accidental destruction of natural resources;

(e) To encourage the establishment of new and the implementation of existing regional agreements for limiting transboundary air pollution;

(f) To develop strategies aiming at the reduction of emissions causing transboundary air pollution and their effects.

Activities

9.28. Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental and non-governmental organizations, the private sector and financial institutions, should:

(a) Establish and/or strengthen regional agreements for transboundary air pollution control and cooperate, particularly with developing countries, in the areas of systematic observation and assessment, modelling and the development and exchange of emission control technologies for mobile and stationary sources of air pollution. In this context, greater emphasis should be put on addressing the extent, causes, health and socio-economic impacts of ultraviolet radiation, acidification of the environment and photo-oxidant damage to forests and other vegetation;

(b) Establish or strengthen early warning systems and response mechanisms for transboundary air pollution resulting from industrial accidents and natural disasters and the deliberate and/or accidental destruction of natural resources;

(c) Facilitate training opportunities and exchange of data, information and national and/or regional experiences;

(d) Cooperate on regional, multilateral and bilateral bases to assess transboundary air pollution, and elaborate and implement programmes identifying specific actions to reduce atmospheric emissions and to address their environmental, economic, social and other effects.

Means of implementation

International and regional cooperation

9.29. Existing legal instruments have created institutional structures which relate to the purposes of these instruments, and relevant work should primarily continue in those contexts. Governments should continue to cooperate and enhance their cooperation at the regional and global levels, including cooperation within the United Nations system. In this context reference is made to the recommendations in chapter 38 of Agenda 21 (International institutional arrangements).

Capacity-building

9.30. Countries, in cooperation with the relevant United Nations bodies, international donors and non-governmental organizations, should mobilize technical and financial resources and facilitate technical cooperation with developing countries to reinforce their technical, managerial, planning and administrative capacities to promote sustainable development and the protection of the atmosphere, in all relevant sectors.

Human resource development

9.31. Education and awareness-raising programmes concerning the promotion of sustainable development and the protection of the atmosphere need to be introduced and strengthened at the local, national and international levels in all relevant sectors.

Financial and cost evaluation

9.32. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities under programme area A to be about $640 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

9.33. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of the four-part programme under programme area B to be about $20 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

9.34. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities under programme area C to be in the range of $160-590 million on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

9.35. The Conference secretariat has included costing for technical assistance and pilot programmes under paragraphs 9.32 and 9.33.

Notes

1/ New and renewable energy sources are solar thermal, solar photovoltaic, wind, hydro, biomass, geothermal, ocean, animal and human power, as referred to in the reports of the Committee on the Development and Utilization of New and Renewable Sources of Energy, prepared specifically for the Conference (see A/CONF.151/PC/119 and A/AC.218/1992/5).

2/ This includes standards or recommendations promoted by regional economic integration organizations.

Chapter 10

INTEGRATED APPROACH TO THE PLANNING AND MANAGEMENT OF LAND RESOURCES

INTRODUCTION

10.1. Land is normally defined as a physical entity in terms of its topography and spatial nature; a broader integrative view also includes natural resources: the soils, minerals, water and biota that the land comprises. These components are organized in ecosystems which provide a variety of services essential to the maintenance of the integrity of life-support systems and the productive capacity of the environment. Land resources are used in ways that take advantage of all these characteristics. Land is a finite resource, while the natural resources it supports can vary over time and according to management conditions and uses. Expanding human requirements and economic activities are placing ever increasing pressures on land resources, creating competition and conflicts and resulting in suboptimal use of both land and land resources. If, in the future, human requirements are to be met in a sustainable manner, it is now essential to resolve these conflicts and move towards more effective and efficient use of land and its natural resources. Integrated physical and land-use planning and management is an eminently practical way to achieve this. By examining all uses of land in an integrated manner, it makes it possible to minimize conflicts, to make the most efficient trade-offs and to link social and economic development with environmental protection and enhancement, thus helping to achieve the objectives of sustainable development. The essence of the integrated approach finds expression in the coordination of the sectoral planning and management activities concerned with the various aspects of land use and land resources.

10.2. The present chapter consists of one programme area, the integrated approach to the planning and management of land resources, which deals with the reorganization and, where necessary, some strengthening of the decision-making structure, including existing policies, planning and management procedures and methods that can assist in putting in place an integrated approach to land resources. It does not deal with the operational aspects of planning and management, which are more appropriately dealt with under the relevant sectoral programmes. Since the programme deals with an important cross-sectoral aspect of decision-making for sustainable development, it is closely related to a number of other programmes that deal with that issue directly.

PROGRAMME AREA

Integrated approach to the planning and management of land resources

Basis for action

10.3. Land resources are used for a variety of purposes which interact and may compete with one another; therefore, it is desirable to plan and manage all uses in an integrated manner. Integration should take place at two levels, considering, on the one hand, all environmental, social and economic factors (including, for example, impacts of the various economic and social sectors on the environment and natural resources) and, on the other, all environmental and resource components together (i.e., air, water, biota, land, geological and natural resources). Integrated consideration facilitates appropriate choices and trade-offs, thus maximizing sustainable productivity and use. Opportunities to allocate land to different uses arise in the course of major settlement or development projects or in a sequential fashion as lands become available on the market. This in turn provides opportunities to support traditional patterns of sustainable land management or to assign protected status for conservation of biological diversity or critical ecological services.

10.4. A number of techniques, frameworks and processes can be combined to facilitate an integrated approach. They are the indispensable support for the planning and management process, at the national and local level, ecosystem or area levels and for the development of specific plans of action. Many of its elements are already in place but need to be more widely applied, further developed and strengthened. This programme area is concerned primarily with providing a framework that will coordinate decision-making; the content and operational functions are therefore not included here but are dealt with in the relevant sectoral programmes of Agenda 21.

Objectives

10.5. The broad objective is to facilitate allocation of land to the uses that provide the greatest sustainable benefits and to promote the transition to a sustainable and integrated management of land resources. In doing so, environmental, social and economic issues should be taken into consideration. Protected areas, private property rights, the rights of indigenous people and their communities and other local communities and the economic role of women in agriculture and rural development, among other issues, should be taken into account. In more specific terms, the objectives are as follows:

(a) To review and develop policies to support the best possible use of land and the sustainable management of land resources, by not later than 1996;

(b) To improve and strengthen planning, management and evaluation systems for land and land resources, by not later than 2000;

(c) To strengthen institutions and coordinating mechanisms for land and land resources, by not later than 1998;

(d) To create mechanisms to facilitate the active involvement and participation of all concerned, particularly communities and people at the local level, in decision-making on land use and management, by not later than 1996.

Activities

(a) Management-related activities

Developing supportive policies and policy instruments

10.6. Governments at the appropriate level, with the support of regional and international organizations, should ensure that policies and policy instruments support the best possible land use and sustainable management of land resources. Particular attention should be given to the role of agricultural land. To do this, they should:

(a) Develop integrated goal-setting and policy formulation at the national, regional and local levels that takes into account environmental, social, demographic and economic issues;

(b) Develop policies that encourage sustainable land use and management of land resources and take the land resource base, demographic issues and the interests of the local population into account;

(c) Review the regulatory framework, including laws, regulations and enforcement procedures, in order to identify improvements needed to support sustainable land use and management of land resources and restricts the transfer of productive arable land to other uses;

(d) Apply economic instruments and develop institutional mechanisms and incentives to encourage the best possible land use and sustainable management of land resources;

(e) Encourage the principle of delegating policy-making to the lowest level of public authority consistent with effective action and a locally driven approach.

Strengthening planning and management systems

10.7. Governments at the appropriate level, with the support of regional and international organizations, should review and, if appropiate, revise planning and management systems to facilitate an integrated approach. To do this, they should:

(a) Adopt planning and management systems that facilitate the integration of environmental components such as air, water, land and other natural resources, using landscape ecological planning (LANDEP) or other approaches that focus on, for example, an ecosystem or a watershed;

(b) Adopt strategic frameworks that allow the integration of both developmental and environmental goals; examples of these frameworks include sustainable livelihood systems, rural development, the World Conservation Strategy/Caring for the Earth, primary environmental care (PEC) and others;

(c) Establish a general framework for land-use and physical planning within which specialized and more detailed sectoral plans (e.g., for protected areas, agriculture, forests, human settlements, rural development) can be developed; establish intersectoral consultative bodies to streamline project planning and implementation;

(d) Strengthen management systems for land and natural resources by including appropriate traditional and indigenous methods; examples of these practices include pastoralism, Hema reserves (traditional Islamic land reserves) and terraced agriculture;

(e) Examine and, if necessary, establish innovative and flexible approaches to programme funding;

(f) Compile detailed land capability inventories to guide sustainable land resources allocation, management and use at the national and local levels.

Promoting application of appropriate tools for planning and management

10.8. Governments at the appropriate level, with the support of national and international organizations, should promote the improvement, further development and widespread application of planning and management tools that facilitate an integrated and sustainable approach to land and resources. To do this, they should:

(a) Adopt improved systems for the interpretation and integrated analysis of data on land use and land resources;

(b) Systematically apply techniques and procedures for assessing the environmental, social and economic impacts, risks, costs and benefits of specific actions;

(c) Analyse and test methods to include land and ecosystem functions and land resources values in national accounts.

Raising awareness

10.9. Governments at the appropriate level, in collaboration with national institutions and interest groups and with the support of regional and international organizations, should launch awareness-raising campaigns to alert and educate people on the importance of integrated land and land resources management and the role that individuals and social groups can play in it. This should be accompanied by provision of the means to adopt improved practices for land use and sustainable management.

Promoting public participation

10.10. Governments at the appropriate level, in collaboration with national organizations and with the support of regional and international organizations, should establish innovative procedures, programmes, projects and services that facilitate and encourage the active participation of those affected in the decision-making and implementation process, especially of groups that have, hitherto, often been excluded, such as women, youth, indigenous people and their communities and other local communities.

(b) Data and information

Strengthening information systems

10.11. Governments at the appropriate level, in collaboration with national institutions and the private sector and with the support of regional and international organizations, should strengthen the information systems necessary for making decisions and evaluating future changes on land use and management. The needs of both men and women should be taken into account. To do this, they should:

(a) Strengthen information, systematic observation and assessment systems for environmental, economic and social data related to land resources at the global, regional, national and local levels and for land capability and land-use and management patterns;

(b) Strengthen coordination between existing sectoral data systems on land and land resources and strengthen national capacity to gather and assess data;

(c) Provide the appropriate technical information necessary for informed decision-making on land use and management in an accessible form to all sectors of the population, especially to local communities and women;

(d) Support low-cost, community-managed systems for the collection of comparable information on the status and processes of change of land resources, including soils, forest cover, wildlife, climate and other elements.

(c) International and regional coordination and cooperation

Establishing regional machinery

10.12. Governments at the appropriate level, with the support of regional and international organizations, should strengthen regional cooperation and exchange of information on land resources. To do this, they should:

(a) Study and design regional policies to support programmes for land-use and physical planning;

(b) Promote the development of land-use and physical plans in the countries of the region;

(c) Design information systems and promote training;

(d) Exchange, through networks and other appropriate means, information on experiences with the process and results of integrated and participatory planning and management of land resources at the national and local levels.

Means of implementation

(a) Financing and cost evaluation

10.13. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $50 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

Enhancing scientific understanding of the land resources system

10.14. Governments at the appropriate level, in collaboration with the national and international scientific community and with the support of appropriate national and international organizations, should promote and support research, tailored to local environments, on the land resources system and the implications for sustainable development and management practices. Priority should be given, as appropriate, to:

(a) Assessment of land potential capability and ecosystem functions;

(b) Ecosystemic interactions and interactions between land resources and social, economic and environmental systems;

(c) Developing indicators of sustainability for land resources, taking into account environmental, economic, social, demographic, cultural and political factors.

Testing research findings through pilot projects

10.15. Governments at the appropriate level, in collaboration with the national and international scientific community and with the support of the relevant international organizations, should research and test, through pilot projects, the applicability of improved approaches to the integrated planning and management of land resources, including technical, social and institutional factors.

(c) Human resource development

Enhancing education and training

10.16. Governments at the appropriate level, in collaboration with the appropriate local authorities, non-governmental organizations and international institutions, should promote the development of the human resources that are required to plan and manage land and land resources sustainably. This should be done by providing incentives for local initiatives and by enhancing local management capacity, particularly of women, through:

(a) Emphasizing interdisciplinary and integrative approaches in the curricula of schools and technical, vocational and university training;

(b) Training all relevant sectors concerned to deal with land resources in an integrated and sustainable manner;

(c) Training communities, relevant extension services, community-based groups and non-governmental organizations on land management techniques and approaches applied successfully elsewhere.

(d) Capacity-building

Strengthening technological capacity

10.17. Governments at the appropriate level, in cooperation with other Governments and with the support of relevant international organizations, should promote focused and concerted efforts for education and training and the transfer of techniques and technologies that support the various aspects of the sustainable planning and management process at the national, state/provincial and local levels.

Strengthening institutions

10.18. Governments at the appropriate level, with the support of appropriate international organizations, should:

(a) Review and, where appropriate, revise the mandates of institutions that deal with land and natural resources to include explicitly the interdisciplinary integration of environmental, social and economic issues;

(b) Strengthen coordinating mechanisms between institutions that deal with land-use and resources management to facilitate integration of sectoral concerns and strategies;

(c) Strengthen local decision-making capacity and improve coordination with higher levels.

Chapter 11

COMBATING DEFORESTATION

PROGRAMME AREAS

A. Sustaining the multiple roles and functions of all types of forests, forest lands and woodlands

Basis for action

11.1. There are major weaknesses in the policies, methods and mechanisms adopted to support and develop the multiple ecological, economic, social and cultural roles of trees, forests and forest lands. Many developed countries are confronted with the effects of air pollution and fire damage on their forests. More effective measures and approaches are often required at the national level to improve and harmonize policy formulation, planning and programming; legislative measures and instruments; development patterns; participation of the general public, especially women and indigenous people; involvement of youth; roles of the private sector, local organizations, non-governmental organizations and cooperatives; development of technical and multidisciplinary skills and quality of human resources; forestry extension and public education; research capability and support; administrative structures and mechanisms, including intersectoral coordination, decentralization and responsibility and incentive systems; and dissemination of information and public relations. This is especially important to ensure a rational and holistic approach to the sustainable and environmentally sound development of forests. The need for securing the multiple roles of forests and forest lands through adequate and appropriate institutional strengthening has been repeatedly emphasized in many of the reports, decisions and recommendations of FAO, ITTO, UNEP, the World Bank, IUCN and other organizations.

Objectives

11.2. The objectives of this programme area are as follows:

(a) To strengthen forest-related national institutions, to enhance the scope and effectiveness of activities related to the management, conservation and sustainable development of forests, and to effectively ensure the sustainable utilization and production of forests' goods and services in both the developed and the developing countries; by the year 2000, to strengthen the capacities and capabilities of national institutions to enable them to acquire the necessary knowledge for the protection and conservation of forests, as well as to expand their scope and, correspondingly, enhance the effectiveness of programmes and activities related to the management and development of forests;

(b) To strengthen and improve human, technical and professional skills, as well as expertise and capabilities to effectively formulate and implement policies, plans, programmes, research and projects on management, conservation and sustainable development of all types of forests and forest-based resources, and forest lands inclusive, as well as other areas from which forest benefits can be derived.

Activities

(a) Management-related activities

11.3. Governments at the appropriate level, with the support of regional, subregional and international organizations, should, where necessary, enhance institutional capability to promote the multiple roles and functions of all types of forests and vegetation inclusive of other related lands and forest-based resources in supporting sustainable development and environmental conservation in all sectors. This should be done, wherever possible and necessary, by strengthening and/or modifying the existing structures and arrangements, and by improving cooperation and coordination of their respective roles. Some of the major activities in this regard are as follows:

(a) Rationalizing and strengthening administrative structures and mechanisms, including provision of adequate levels of staff and allocation of responsibilities, decentralization of decision-making, provision of infrastructural facilities and equipment, intersectoral coordination and an effective system of communication;

(b) Promoting participation of the private sector, labour unions, rural cooperatives, local communities, indigenous people, youth, women, user groups and non-governmental organizations in forest-related activities, and access to information and training programmes within the national context;

(c) Reviewing and, if necessary, revising measures and programmes relevant to all types of forests and vegetation, inclusive of other related lands and forest-based resources, and relating them to other land uses and development policies and legislation; promoting adequate legislation and other measures as a basis against uncontrolled conversion to other types of land uses;

(d) Developing and implementing plans and programmes, including definition of national and, if necessary, regional and subregional goals, programmes and criteria for their implementation and subsequent improvement;

(e) Establishing, developing and sustaining an effective system of forest extension and public education to ensure better awareness, appreciation and management of forests with regard to the multiple roles and values of trees, forests and forest lands;

(f) Establishing and/or strengthening institutions for forest education and training, as well as forestry industries, for developing an adequate cadre of trained and skilled staff at the professional, technical and vocational levels, with emphasis on youth and women;

(g) Establishing and strengthening capabilities for research related to the different aspects of forests and forest products, for example, on the sustainable management of forests, research on biodiversity, on the effects of air-borne pollutants, on traditional uses of forest resources by local populations and indigenous people, and on improving market returns and other non-market values from the management of forests.

(b) Data and information

11.4. Governments at the appropriate level, with the assistance and cooperation of international, regional, subregional and bilateral agencies, where relevant, should develop adequate databases and baseline information necessary for planning and programme evaluation. Some of the more specific activities include the following:

(a) Collecting, compiling and regularly updating and distributing information on land classification and land use, including data on forest cover, areas suitable for afforestation, endangered species, ecological values, traditional/indigenous land use values, biomass and productivity, correlating demographic, socio-economic and forest resources information at the micro- and macro-levels, and undertaking periodic analyses of forest programmes;

(b) Establishing linkages with other data systems and sources relevant to supporting forest management, conservation and development, while further developing or reinforcing existing systems such as geographic information systems, as appropriate;

(c) Creating mechanisms to ensure public access to this information.

(c) International and regional cooperation and coordination

11.5. Governments at the appropriate level and institutions should cooperate in the provision of expertise and other support and the promotion of international research efforts, in particular with a view to enhancing transfer of technology and specialized training and ensuring access to experiences and research results. There is need for strengthening coordination and improving the performance of existing forest-related international organizations in providing technical cooperation and support to interested countries for the management, conservation and sustainable development of forests.

Means of implementation

(a) Financial and cost evaluation

11.6. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $2.5 billion, including about $860 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

11.7. The planning, research and training activities specified will form the scientific and technological means for implementing the programme, as well as its output. The systems, methodology and know-how generated by the programme will help improve efficiency. Some of the specific steps involved should include:

(a) Analysing achievements, constraints and social issues for supporting programme formulation and implementation;

(b) Analysing research problems and research needs, research planning and implementation of specific research projects;

(c) Assessing needs for human resources, skill development and training;

(d) Developing, testing and applying appropriate methodologies/approaches in implementing forest programmes and plans.

(c) Human resource development

11.8. The specific components of forest education and training will effectively contribute to human resource development. These include:

(a) Launching of graduate and post-graduate degree, specialization and research programmes;

(b) Strengthening of pre-service, in-service and extension service training programmes at the technical and vocational levels, including training of trainers/teachers, and developing curriculum and teaching materials/methods;

(c) Special training for staff of national forest-related organizations in aspects such as project formulation, evaluation and periodical evaluations.

(d) Capacity-building

11.9. This programme area is specifically concerned with capacity-building in the forest sector and all programme activities specified contribute to that end. In building new and strengthened capacities, full advantage should be taken of the existing systems and experience.

B. Enhancing the protection, sustainable management and conservation of all forests, and the greening of degraded areas, through forest rehabilitation, afforestation, reforestation and other rehabilitative means

Basis for action

11.10. Forests world wide have been and are being threatened by uncontrolled degradation and conversion to other types of land uses, influenced by increasing human needs; agricultural expansion; and environmentally harmful mismanagement, including, for example, lack of adequate forest-fire control and anti-poaching measures, unsustainable commercial logging, overgrazing and unregulated browsing, harmful effects of airborne pollutants, economic incentives and other measures taken by other sectors of the economy. The impacts of loss and degradation of forests are in the form of soil erosion; loss of biological diversity, damage to wildlife habitats and degradation of watershed areas, deterioration of the quality of life and reduction of the options for development.

11.11. The present situation calls for urgent and consistent action for conserving and sustaining forest resources. The greening of suitable areas, in all its component activities, is an effective way of increasing public awareness and participation in protecting and managing forest resources. It should include the consideration of land use and tenure patterns and local needs and should spell out and clarify the specific objectives of the different types of greening activities.

Objectives

11.12. The objectives of this programme area are as follows:

(a) To maintain existing forests through conservation and management, and sustain and expand areas under forest and tree cover, in appropriate areas of both developed and developing countries, through the conservation of natural forests, protection, forest rehabilitation, regeneration, afforestation, reforestation and tree planting, with a view to maintaining or restoring the ecological balance and expanding the contribution of forests to human needs and welfare;

(b) To prepare and implement, as appropriate, national forestry action programmes and/or plans for the management, conservation and sustainable development of forests. These programmes and/or plans should be integrated with other land uses. In this context, country-driven national forestry action programmes and/or plans under the Tropical Forestry Action Programme are currently being implemented in more than 80 countries, with the support of the international community;

(c) To ensure sustainable management and, where appropriate, conservation of existing and future forest resources;

(d) To maintain and increase the ecological, biological, climatic, socio-cultural and economic contributions of forest resources;

(e) To facilitate and support the effective implementation of the non-legally binding authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests, adopted by the United Nations Conference on Environment and Development, and on the basis of the implementation of these principles to consider the need for and the feasibility of all kinds of appropriate internationally agreed arrangements to promote international cooperation on forest management, conservation and sustainable development of all types of forests, including afforestation, reforestation and rehabilitation.

Activities

(a) Management-related activities

11.13. Governments should recognize the importance of categorizing forests, within the framework of long-term forest conservation and management policies, into different forest types and setting up sustainable units in every region/watershed with a view to securing the conservation of forests. Governments, with the participation of the private sector, non-governmental organizations, local community groups, indigenous people, women, local government units and the public at large, should act to maintain and expand the existing vegetative cover wherever ecologically, socially and economically feasible, through technical cooperation and other forms of support. Major activities to be considered include:

(a) Ensuring the sustainable management of all forest ecosystems and woodlands, through improved proper planning, management and timely implementation of silvicultural operations, including inventory and relevant research, as well as rehabilitation of degraded natural forests to restore productivity and environmental contributions, giving particular attention to human needs for economic and ecological services, wood-based energy, agroforestry, non-timber forest products and services, watershed and soil protection, wildlife management, and forest genetic resources;

(b) Establishing, expanding and managing, as appropriate to each national context, protected area systems, which includes systems of conservation units for their environmental, social and spiritual functions and values, including conservation of forests in representative ecological systems and landscapes, primary old-growth forests, conservation and management of wildlife, nomination of World Heritage Sites under the World Heritage Convention, as appropriate, conservation of genetic resources, involving *in situ* and *ex situ* measures and undertaking supportive measures to ensure sustainable utilization of biological resources and conservation of biological diversity and the traditional forest habitats of indigenous people, forest dwellers and local communities;

(c) Undertaking and promoting buffer and transition zone management;

(d) Carrying out revegetation in appropriate mountain areas, highlands, bare lands, degraded farm lands, arid and semi-arid lands and coastal areas for combating desertification and preventing erosion problems and for other protective functions and national programmes for rehabilitation of degraded lands, including community forestry, social forestry, agroforestry and silvipasture, while also taking into account the role of forests as national carbon reservoirs and sinks;

(e) Developing industrial and non-industrial planted forests in order to support and promote national ecologically sound afforestation and reforestation/regeneration programmes in suitable sites, including upgrading of existing planted forests of both industrial and non-industrial and commercial purpose to increase their contribution to human needs and to offset pressure on primary/old growth forests. Measures should be taken to promote and provide intermediate yields and to improve the rate of returns on investments in planted forests, through interplanting and underplanting valuable crops;

(f) Developing/strengthening a national and/or master plan for planted forests as a priority, indicating, *inter alia*, the location, scope and species, and specifying areas of existing planted forests requiring rehabilitation, taking into account the economic aspect for future planted forest development, giving emphasis to native species;

(g) Increasing the protection of forests from pollutants, fire, pests and diseases and other human-made interferences such as forest poaching, mining and unmitigated shifting cultivation, the uncontrolled introduction of exotic plant and animal species, as well as developing and accelerating research for a better understanding of problems relating to the management and regeneration of all types of forests; strengthening and/or establishing appropriate measures to assess and/or check inter-border movement of plants and related materials;

(h) Stimulating development of urban forestry for the greening of urban, peri-urban and rural human settlements for amenity, recreation and production purposes and for protecting trees and groves;

(i) Launching or improving opportunities for participation of all people, including youth, women, indigenous people and local communities in the formulation, development and implementation of forest-related programmes and other activities, taking due account of the local needs and cultural values;

(j) Limiting and aiming to halt destructive shifting cultivation by addressing the underlying social and ecological causes.

(b) Data and information

11.14. Management-related activities should involve collection, compilation and analysis of data/information, including baseline surveys. Some of the specific activities include the following:

(a) Carrying out surveys and developing and implementing land-use plans for appropriate greening/planting/afforestation/reforestation/forest rehabilitation;

(b) Consolidating and updating land-use and forest inventory and management information for management and land-use planning of wood and non-wood resources, including data on shifting cultivation and other agents of forest destruction;

(c) Consolidating information on genetic resources and related biotechnology, including surveys and studies, as necessary;

(d) Carrying out surveys and research on local/indigenous knowledge of trees and forests and their uses to improve the planning and implementation of sustainable forest management;

(e) Compiling and analysing research data on species/site interaction of species used in planted forests and assessing the potential impact on forests of climatic change, as well as effects of forests on climate, and initiating in-depth studies on the carbon cycle relating to different forest types to provide scientific advice and technical support;

(f) Establishing linkages with other data/information sources that relate to sustainable management and use of forests and improving access to data and information;

(g) Developing and intensifying research to improve knowledge and understanding of problems and natural mechanisms related to the management and rehabilitation of forests, including research on fauna and its interrelation with forests;

(h) Consolidating information on forest conditions and site-influencing immissions and emissions.

(c) International and regional cooperation and coordination

11.15. The greening of appropriate areas is a task of global importance and impact. The international and regional community should provide technical cooperation and other means for this programme area. Specific activities of an international nature, in support of national efforts, should include the following:

(a) Increasing cooperative actions to reduce pollutants and trans-boundary impacts affecting the health of trees and forests and conservation of representative ecosystems;

(b) Coordinating regional and subregional research on carbon sequestration, air pollution and other environmental issues;

(c) Documenting and exchanging information/experience for the benefit of countries with similar problems and prospects;

(d) Strengthening the coordination and improving the capacity and ability of intergovernmental organizations such as FAO, ITTO, UNEP and UNESCO to provide technical support for the management, conservation and sustainable development of forests, including support for the negotiation of the International Tropical Timber Agreement of 1983, due in 1992/93.

Means of implementation

(a) Financial and cost evaluation

11.16. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $10 billion, including about $3.7 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

11.17. Data analysis, planning, research, transfer/development of technology and/or training activities form an integral part of the programme activities, providing the scientific and technological means of implementation. National institutions should:

(a) Develop feasibility studies and operational planning related to major forest activities;

(b) Develop and apply environmentally sound technology relevant to the various activities listed;

(c) Increase action related to genetic improvement and application of biotechnology for improving productivity and tolerance to environmental stress and including, for example, tree breeding, seed technology, seed procurement networks, germ-plasm banks, "in vitro" techniques, and *in situ* and *ex situ* conservation.

(c) Human resource development

11.18. Essential means for effectively implementing the activities include training and development of appropriate skills, working facilities and conditions, public motivation and awareness. Specific activities include:

(a) Providing specialized training in planning, management, environmental conservation, biotechnology etc.;

(b) Establishing demonstration areas to serve as models and training facilities;

(c) Supporting local organizations, communities, non-governmental organizations and private land owners, in particular women, youth, farmers and indigenous people/shifting cultivators, through extension and provision of inputs and training.

(d) Capacity-building

11.19. National Governments, the private sector, local organizations/communities, indigenous people, labour unions and non-governmental organizations should develop capacities, duly supported by relevant international organizations, to implement the programme activities. Such capacities should be developed and strengthened in harmony with the programme activities. Capacity-building activities include policy and legal frameworks, national institution building, human resource development, development of research and technology, development of infrastructure, enhancement of public awareness etc.

C. Promoting efficient utilization and assessment to recover the full valuation of the goods and services provided by forests, forest lands and woodlands

Basis for action

11.20. The vast potential of forests and forest lands as a major resource for development is not yet fully realized. The improved management of forests can increase the production of goods and services and, in particular, the yield of wood and non-wood forest products, thus helping to generate additional employment and income, additional value through processing and trade of forest products, increased contribution to foreign exchange earnings, and increased return on investment. Forest resources, being renewable, can be sustainably managed in a manner that is compatible with environmental conservation. The implications of the harvesting of forest resources for the other values of the forest should be taken fully into consideration in the development of forest policies. It is also possible to increase the value of forests through non-damaging uses such as eco-tourism and the managed supply of genetic materials. Concerted action is needed in order to increase people's perception of the value of forests and of the benefits they provide. The survival of forests and their continued contribution to human welfare depends to a great extent on succeeding in this endeavour.

Objectives

11.21. The objectives of this programme area are as follows:

(a) To improve recognition of the social, economic and ecological values of trees, forests and forest lands, including the consequences of the damage caused by the lack of forests; to promote methodologies with a view to incorporating social, economic and ecological values of trees, forests and forest lands into the national economic accounting systems; to ensure their sustainable management in a way that is consistent with land use, environmental considerations and development needs;

(b) To promote efficient, rational and sustainable utilization of all types of forests and vegetation inclusive of other related lands and forest-based resources, through the development of efficient forest-based processing industries, value-adding secondary processing and trade in forest products, based on sustainably managed forest resources and in accordance with plans that integrate all wood and non-wood values of forests;

(c) To promote more efficient and sustainable use of forests and trees for fuelwood and energy supplies;

(d) To promote more comprehensive use and economic contributions of forest areas by incorporating eco-tourism into forest management and planning.

Activities

(a) Management-related activities

11.22. Governments, with the support of the private sector, scientific institutions, indigenous people, non-governmental organizations, cooperatives and entrepreneurs, where appropriate, should undertake the following activities, properly coordinated at the national level, with financial and technical cooperation from international organizations:

(a) Carrying out detailed investment studies, supply-demand harmonization and environmental impact analysis to rationalize and improve trees and forest utilization and to develop and establish appropriate incentive schemes and regulatory measures, including tenurial arrangements, to provide a favourable investment climate and promote better management;

(b) Formulating scientifically sound criteria and guidelines for the management, conservation and sustainable development of all types of forests;

(c) Improving environmentally sound methods and practices of forest harvesting, which are ecologically sound and economically viable, including planning and management, improved use of equipment, storage and transportation to reduce and, if possible, maximize the use of waste and improve value of both wood and non-wood forest products;

(d) Promoting the better use and development of natural forests and woodlands, including planted forests, wherever possible, through appropriate and environmentally sound and economically viable activities, including silvicultural practices and management of other plant and animal species;

(e) Promoting and supporting the downstream processing of forest products to increase retained value and other benefits;

(f) Promoting/popularizing non-wood forest products and other forms of forest resources, apart from fuelwood (e.g., medicinal plants, dyes, fibres, gums, resins, fodder, cultural products, rattan, bamboo) through programmes and social forestry/participatory forest activities, including research on their processing and uses;

(g) Developing, expanding and/or improving the effectiveness and efficiency of forest-based processing industries, both wood and non-wood based, involving such aspects as efficient conversion technology and improved sustainable utilization of harvesting and process residues; promoting underutilized species in natural forests through research, demonstration and commercialization; promoting value-adding secondary processing for improved employment, income and retained value; and promoting/improving markets for, and trade in, forest products through relevant institutions, policies and facilities;

(h) Promoting and supporting the management of wildlife, as well as eco-tourism, including farming, and encouraging and supporting the husbandry and cultivation of wild species, for improved rural income and employment, ensuring economic and social benefits without harmful ecological impacts;

(i) Promoting appropriate small-scale forest-based enterprises for supporting rural development and local entrepreneurship;

(j) Improving and promoting methodologies for a comprehensive assessment that will capture the full value of forests, with a view to including that value in the market-based pricing structure of wood and non-wood based products;

(k) Harmonizing sustainable development of forests with national development needs and trade policies that are compatible with the ecologically sound use of forest resources, using, for example, the ITTO Guidelines for Sustainable Management of Tropical Forests;

(l) Developing, adopting and strengthening national programmes for accounting the economic and non-economic value of forests.

(b) Data and information

11.23. The objectives and management-related activities presuppose data and information analysis, feasibility studies, market surveys and review of technological information. Some of the relevant activities include:

(a) Undertaking analysis of supply and demand for forest products and services, to ensure efficiency in their utilization, wherever necessary;

(b) Carrying out investment analysis and feasibility studies, including environmental impact assessment, for establishing forest-based processing enterprises;

(c) Conducting research on the properties of currently underutilized species for their promotion and commercialization;

(d) Supporting market surveys of forest products for trade promotion and intelligence;

(e) Facilitating the provision of adequate technological information as a measure to promote better utilization of forest resources.

(c) International and regional cooperation and coordination

11.24. Cooperation and assistance of international organizations and the international community in technology transfer, specialization and promotion of fair terms of trade, without resorting to unilateral restrictions and/or bans on forest products contrary to GATT and other multilateral trade agreements, the application of appropriate market mechanisms and incentives will help in addressing global environmental concerns. Strengthening the coordination and performance of existing international organizations, in particular FAO, UNIDO, UNESCO, UNEP, ITC/UNCTAD/GATT, ITTO and ILO, for providing technical assistance and guidance in this programme area is another specific activity.

Means of implementation

(a) Financial and cost evaluation

11.25. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $18 billion, including about $880 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

11.26. The programme activities presuppose major research efforts and studies, as well as improvement of technology. This should be coordinated by national Governments, in collaboration with and supported by relevant international organizations and institutions. Some of the specific components include:

(a) Research on properties of wood and non-wood products and their uses, to promote improved utilization;

(b) Development and application of environmentally sound and less-polluting technology for forest utilization;

(c) Models and techniques of outlook analysis and development planning;

(d) Scientific investigations on the development and utilization of non-timber forest products;

(e) Appropriate methodologies to comprehensively assess the value of forests.

(c) Human resource development

11.27. The success and effectiveness of the programme area depends on the availability of skilled personnel. Specialized training is an important factor in this regard. New emphasis should be given to the incorporation of women. Human resource development for programme implementation, in quantitative and qualitative terms, should include:

(a) Developing required specialized skills to implement the programme, including establishing special training facilities at all levels;

(b) Introducing/strengthening refresher training courses, including fellowships and study tours, to update skills and technological know-how and improve productivity;

(c) Strengthening capability for research, planning, economic analysis, periodical evaluations and evaluation, relevant to improved utilization of forest resources;

(d) Promoting efficiency and capability of private and cooperative sectors through provision of facilities and incentives.

(d) Capacity-building

11.28. Capacity-building, including strengthening of existing capacity, is implicit in the programme activities. Improving administration, policy and plans, national institutions, human resources, research and scientific capabilities, technology development, and periodical evaluations and evaluation are important components of capacity-building.

D. Establishing and/or strengthening capacities for the planning, assessment and systematic observations of forests and related programmes, projects and activities, including commercial trade and processes

Basis for action

11.29. Assessment and systematic observations are essential components of long-term planning, for evaluating effects, quantitatively and qualitatively, and for rectifying inadequacies. This mechanism, however, is one of the often neglected aspects of forest resources, management, conservation and development. In many cases, even the basic information related to the area and type of forests, existing potential and volume of harvest is lacking. In many developing countries, there is a lack of structures and mechanisms to carry out these functions. There is an urgent need to rectify this situation for a better understanding of the role and importance of forests and to realistically plan for their effective conservation, management, regeneration, and sustainable development.

Objectives

11.30. The objectives of this programme area are as follows:

(a) To strengthen or establish systems for the assessment and systematic observations of forests and forest lands with a view to assessing the impacts of programmes, projects and activities on the quality and extent of forest resources, land available for afforestation, and land tenure, and to integrate the systems in a continuing process of research and in-depth analysis, while ensuring necessary modifications and improvements for planning and decision-making. Specific emphasis should be given to the participation of rural people in these processes;

(b) To provide economists, planners, decision makers and local communities with sound and adequate updated information on forests and forest land resources.

Activities

(a) Management-related activities

11.31. Governments and institutions, in collaboration, where necessary, with appropriate international agencies and organizations, universities and non-governmental organizations, should undertake assessments and systematic observations of forests and related programmes and processes with a view to their continuous improvement. This should be linked to related activities of research and management and, wherever possible, be built upon existing systems. Major activities to be considered are:

(a) Assessing and carrying out systematic observations of the quantitative and qualitative situation and changes of forest cover and forest resources endowments, including land classification, land use and updates of its status, at the appropriate national level, and linking this activity, as appropriate, with planning as a basis for policy and programme formulation;

(b) Establishing national assessment and systematic observation systems and evaluation of programmes and processes, including establishment of definitions, standards, norms and intercalibration methods, and the capability for initiating corrective actions as well as improving the formulation and implementation of programmes and projects;

(c) Making estimates of impacts of activities affecting forestry developments and conservation proposals, in terms of key variables such as developmental goals, benefits and costs, contributions of forests to other sectors, community welfare, environmental conditions and biological diversity and their impacts at the local, regional and global levels, where appropriate, to assess the changing technological and financial needs of countries;

(d) Developing national systems of forest resource assessment and valuation, including necessary research and data analysis, which account for, where possible, the full range of wood and non-wood forest products and services, and incorporating results in plans and strategies and, where feasible, in national systems of accounts and planning;

(e) Establishing necessary intersectoral and programme linkages, including improved access to information, in order to support a holistic approach to planning and programming.

(b) Data and information

11.32. Reliable data and information are vital to this programme area. National Governments, in collaboration, where necessary, with relevant international organizations, should, as appropriate, undertake to improve data and information continuously and to ensure its exchange. Major activities to be considered are as follows:

(a) Collecting, consolidating and exchanging existing information and establishing baseline information on aspects relevant to this programme area;

(b) Harmonizing the methodologies for programmes involving data and information activities to ensure accuracy and consistency;

(c) Undertaking special surveys on, for example, land capability and suitability for afforestation action;

(d) Enhancing research support and improving access to and exchange of research results.

(c) International and regional cooperation and coordination

11.33. The international community should extend to the Governments concerned necessary technical and financial support for implementing this programme area, including consideration of the following activities:

(a) Establishing conceptual framework and formulating acceptable criteria, norms and definitions for systematic observations and assessment of forest resources;

(b) Establishing and strengthening national institutional coordination mechanisms for forest assessment and systematic observation activities;

(c) Strengthening existing regional and global networks for the exchange of relevant information;

(d) Strengthening the capacity and ability and improving the performance of existing international organizations, such as the Consultative Group on International Agricultural Research (CGIAR), FAO, ITTO, UNEP, UNESCO and UNIDO, to provide technical support and guidance in this programme area.

Means of implementation

(a) Financial and cost evaluation

11.34. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $750 million, including about $230 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

11.35. Accelerating development consists of implementing the management-related and data/information activities cited above. Activities related to global environmental issues are those that will contribute to global information for assessing/evaluating/addressing environmental issues on a worldwide basis. Strengthening the capacity of international institutions consists of enhancing the technical staff and the executing capacity of several international organizations in order to meet the requirements of countries.

(b) Scientific and technological means

11.36. Assessment and systematic observation activities involve major research efforts, statistical modelling and technological innovation. These have been internalized into the management-related activities. The activities in turn will improve the technological and scientific content of assessment and periodical evaluations. Some of the specific scientific and technological components included under these activities are:

(a) Developing technical, ecological and economic methods and models related to periodical evaluations and evaluation;

(b) Developing data systems, data processing and statistical modelling;

(c) Remote sensing and ground surveys;

(d) Developing geographic information systems;

(e) Assessing and improving technology.

11.37. These are to be linked and harmonized with similar activities and components in the other programme areas.

(c) Human resource development

11.38. The programme activities foresee the need and include provision for human resource development in terms of specialization (e.g., the use of remote-sensing, mapping and statistical modelling), training, technology transfer, fellowships and field demonstrations.

(d) Capacity-building

11.39. National Governments, in collaboration with appropriate international organizations and institutions, should develop the necessary capacity for implementing this programme area. This should be harmonized with capacity-building for other programme areas. Capacity-building should cover such aspects as policies, public administration, national-level institutions, human resource and skill development, research capability, technology development, information systems, programme evaluation, intersectoral coordination and international cooperation.

(e) Funding of international and regional cooperation

11.40. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $750 million, including about $530 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

Chapter 12

MANAGING FRAGILE ECOSYSTEMS: COMBATING DESERTIFICATION AND DROUGHT

INTRODUCTION

12.1. Fragile ecosystems are important ecosystems, with unique features and resources. Fragile ecosystems include deserts, semi-arid lands, mountains, wetlands, small islands and certain coastal areas. Most of these ecosystems are regional in scope, as they transcend national boundaries. This chapter addresses land resource issues in deserts, as well as arid, semi-arid and dry sub-humid areas. Sustainable mountain development is addressed in chapter 13; small islands and coastal areas are discussed in chapter 17.

12.2. Desertification is land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities. Desertification affects about one sixth of the world's population, 70 per cent of all drylands, amounting to 3.6 billion hectares, and one quarter of the total land area of the world. The most obvious impact of desertification, in addition to widespread poverty, is the degradation of 3.3 billion hectares of the total area of rangeland, constituting 73 per cent of the rangeland with a low potential for human and animal carrying capacity; decline in soil fertility and soil structure on about 47 per cent of the dryland areas constituting marginal rainfed cropland; and the degradation of irrigated cropland, amounting to 30 per cent of the dryland areas with a high population density and agricultural potential.

12.3. The priority in combating desertification should be the implementation of preventive measures for lands that are not yet degraded, or which are only slightly degraded. However, the severely degraded areas should not be neglected. In combating desertification and drought, the participation of local communities, rural organizations, national Governments, non-governmental organizations and international and regional organizations is essential.

12.4. The following programme areas are included in this chapter:

(a) Strengthening the knowledge base and developing information and monitoring systems for regions prone to desertification and drought, including the economic and social aspects of these ecosystems;

(b) Combating land degradation through, inter alia, intensified soil conservation, afforestation and reforestation activities;

(c) Developing and strengthening integrated development programmes for the eradication of poverty and promotion of alternative livelihood systems in areas prone to desertification;

(d) Developing comprehensive anti-desertification programmes and integrating them into national development plans and national environmental planning;

(e) Developing comprehensive drought preparedness and drought-relief schemes, including self-help arrangements, for drought-prone areas and designing programmes to cope with environmental refugees;

(f) Encouraging and promoting popular participation and environmental education, focusing on desertification control and management of the effects of drought.

PROGRAMME AREAS

A. Strengthening the knowledge base and developing information and monitoring systems for regions prone to desertification and drought, including the economic and social aspects of these ecosystems

Basis for action

12.5. The global assessments of the status and rate of desertification conducted by the United Nations Environment Programme (UNEP) in 1977, 1984 and 1991 have revealed insufficient basic knowledge of desertification processes. Adequate world-wide systematic observation systems are helpful for the development and implementation of effective anti-desertification programmes. The capacity of existing international, regional and national institutions, particularly in developing countries, to generate and exchange relevant information is limited. An integrated and coordinated information and systematic observation system based on appropriate technology and embracing global, regional, national and local levels is essential for understanding the dynamics of desertification and drought processes. It is also important for developing adequate measures to deal with desertification and drought and improving socio-economic conditions.

Objectives

12.6. The objectives of this programme area are:

(a) To promote the establishment and/or strengthening of national environmental information coordination centres that will act as focal points within Governments for sectoral ministries and provide the necessary standardization and back-up services; to ensure also that national environmental information systems on desertification and drought are linked together through a network at subregional, regional and interregional levels;

(b) To strengthen regional and global systematic observation networks linked to the development of national systems for the observation of land degradation and desertification caused both by climate fluctuations and by human impact, and to identify priority areas for action;

(c) To establish a permanent system at both national and international levels for monitoring desertification and land degradation with the aim of improving living conditions in the affected areas.

Activities

(a) Management-related activities

12.7. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Establish and/or strengthen environmental information systems at the national level;

(b) Strengthen national, state/provincial and local assessment and ensure cooperation/networking between existing environmental information and monitoring systems, such as Earthwatch and the Sahara and Sahel Observatory;

(c) Strengthen the capacity of national institutions to analyse environmental data so that ecological change can be monitored and environmental information obtained on a continuing basis at the national level.

(b) Data and information

12.8. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Review and study the means for measuring the ecological, economic and social consequences of desertification and land degradation and introduce the results of these studies internationally into desertification and land degradation assessment practices;

(b) Review and study the interactions between the socio-economic impacts of climate, drought and desertification and utilize the results of these studies to secure concrete action.

12.9. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Support the integrated data collection and research work of programmes related to desertification and drought problems;

(b) Support national, regional and global programmes for integrated data collection and research networks carrying out assessment of soil and land degradation;

(c) Strengthen national and regional meteorological and hydrological networks and monitoring systems to ensure adequate collection of basic information and communication among national, regional and international centres.

(c) International and regional cooperation and coordination

12.10. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Strengthen regional programmes and international cooperation, such as the Permanent Inter-State Committee on Drought Control in the Sahel (CILSS), the Intergovernmental Authority for Drought and Development (IGADD), the Southern African Development Coordination Conference (SADCC), the Arab Maghreb Union and other regional organizations, as well as such organizations as the Sahara and Sahel Observatory;

(b) Establish and/or develop a comprehensive desertification, land degradation and human condition database component that incorporates both physical and socio-economic parameters. This should be based on existing and, where necessary, additional facilities, such as those of Earthwatch and other information systems of international, regional and national institutions strengthened for this purpose;

(c) Determine benchmarks and define indicators of progress that facilitate the work of local and regional organizations in tracking progress in the fight for anti-desertification. Particular attention should be paid to indicators of local participation.

Means of implementation

(a) Financing and cost evaluation

12.11. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $350 million, including about $175 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

12.12. Governments at the appropriate level, with the support of the relevant international and regional organizations working on the issue of desertification and drought, should:

(a) Undertake and update existing inventories of natural resources, such as energy, water, soil, minerals, plant and animal access to food, as well as other resources, such as housing, employment, health, education and demographic distribution in time and space;

(b) Develop integrated information systems for environmental monitoring, accounting and impact assessment;

(c) International bodies should cooperate with national Governments to facilitate the acquisition and development of appropriate technology for monitoring and combating drought and desertification.

(c) Human resource development

12.13. Governments at the appropriate level, with the support of the relevant international and regional organizations working on the issue of desertification and drought, should develop the technical and professional skills of people engaged in monitoring and assessing the issue of desertification and drought.

(d) Capacity-building

12.14. Governments at the appropriate level, with the support of the relevant international and regional organizations working on the issue of desertification and drought, should:

(a) Strengthen national and local institutions by providing adequate staff equipment and finance for assessing desertification;

(b) Promote the involvement of the local population, particularly women and youth, in the collection and utilization of environmental information through education and awareness-building.

B. Combating land degradation through, *inter alia*, intensified soil conservation, afforestation and reforestation activities

Basis for action

12.15. Desertification affects about 3.6 billion hectares, which is about 70 per cent of the total area of the world's drylands or nearly one quarter of the global land area. In combating desertification on rangeland, rainfed cropland and irrigated land, preventative measures should be launched in areas which are not yet affected or are only slightly affected by desertification; corrective measures should be implemented to sustain the productivity of moderately desertified land; and rehabilitative measures should be taken to recover severely or very severely desertified drylands.

12.16. An increasing vegetation cover would promote and stabilize the hydrological balance in the dryland areas and maintain land quality and land productivity. Prevention of not yet degraded land and application of corrective measures and rehabilitation of moderate and severely degraded drylands, including areas affected by sand dune movements, through the introduction of environmentally sound, socially acceptable, fair and economically feasible land-use systems. This will enhance the land carrying capacity and maintenance of biotic resources in fragile ecosystems.

Objectives

12.17. The objectives of this programme area are:

(a) As regards areas not yet affected or only slightly affected by desertification, to ensure appropriate management of existing natural formations (including forests) for the conservation of biodiversity, watershed protection, sustainability of their production and agricultural development, and other purposes, with the full participation of indigenous people;

(b) To rehabilitate moderately to severely desertified drylands for productive utilization and sustain their productivity for agropastoral/agroforestry development through, *inter alia*, soil and water conservation;

(c) To increase the vegetation cover and support management of biotic resources in regions affected or prone to desertification and drought, notably through such activities as afforestation/reforestation, agroforestry, community forestry and vegetation retention schemes;

(d) To improve management of forest resources, including woodfuel, and to reduce woodfuel consumption through more efficient utilization, conservation and the enhancement, development and use of other sources of energy, including alternative sources of energy.

Activities

(a) Management-related activities

12.18. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should:

(a) Implement urgent direct preventive measures in drylands that are vulnerable but not yet affected, or only slightly desertified drylands, by introducing (i) improved land-use policies and practices for more sustainable land productivity; (ii) appropriate, environmentally sound and economically feasible agricultural and pastoral technologies; and (iii) improved management of soil and water resources;

(b) Carry out accelerated afforestation and reforestation programmes, using drought-resistant, fast-growing species, in particular native ones, including legumes and other species, combined with community-based agroforestry schemes. In this regard, creation of large-scale reforestation and afforestation schemes, particularly through the establishment of green belts, should be considered, bearing in mind the multiple benefits of such measures;

(c) Implement urgent direct corrective measures in moderately to severely desertified drylands, in addition to the measures listed in paragraph 19 (a) above, with a view to restoring and sustaining their productivity;

(d) Promote improved land/water/crop-management systems, making it possible to combat salinization in existing irrigated croplands; and to stabilize rainfed croplands and introduce improved soil/crop-management systems into land-use practice;

(e) Promote participatory management of natural resources, including rangeland, to meet both the needs of rural populations and conservation purposes, based on innovative or adapted indigenous technologies;

(f) Promote *in situ* protection and conservation of special ecological areas through legislation and other means for the purpose of combating desertification while ensuring the protection of biodiversity;

(g) Promote and encourage investment in forestry development in drylands through various incentives, including legislative measures;

(h) Promote the development and use of sources of energy which will lessen pressure on ligneous resources, including alternative sources of energy and improved stoves.

(b) Data and information

12.19. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Develop land-use models based on local practices for the improvement of such practices, with a focus on preventing land degradation. The models should give a better understanding of the variety of natural and human-induced factors that may contribute to desertification. Models should incorporate the interaction of both new and traditional practices to prevent land degradation and reflect the resilience of the whole ecological and social system;

(b) Develop, test and introduce, with due regard to environmental security considerations, drought resistant, fast-growing and productive plant species appropriate to the environment of the regions concerned.

(c) International and regional cooperation and coordination

12.20. The appropriate United Nations agencies, international and regional organizations, non-governmental organizations and bilateral agencies should:

(a) Coordinate their roles in combating land degradation and promoting reforestation, agroforestry and land-management systems in affected countries;

(b) Support regional and subregional activities in technology development and dissemination, training and programme implementation to arrest dryland degradation.

12.21. The national Governments concerned, the appropriate United Nations agencies and bilateral agencies should strengthen the coordinating role in dryland degradation of subregional intergovernmental organizations set up to cover these activities, such as CILSS, IGADD, SADCC and the Arab Maghreb Union.

Means of implementation

(a) Financing and cost evaluation

12.22. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $6 billion, including about $3 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

12.23. Governments at the appropriate level and local communities, with the support of the relevant international and regional organizations, should:

(a) Integrate indigenous knowledge related to forests, forest lands, rangeland and natural vegetation into research activities on desertification and drought;

(b) Promote integrated research programmes on the protection, restoration and conservation of water and land resources and land-use management based on traditional approaches, where feasible.

(c) Human resource development

12.24. Governments at the appropriate level and local communities, with the support of the relevant international and regional organizations, should:

(a) Establish mechanisms to ensure that land users, particularly women, are the main actors in implementing improved land use, including agroforestry systems, in combating land degradation;

(b) Promote efficient extension-service facilities in areas prone to desertification and drought, particularly for training farmers and pastoralists in the improved management of land and water resources in drylands.

(d) Capacity-building

12.25. Governments at the appropriate level and local communities, with the support of the relevant international and regional organizations, should:

(a) Develop and adopt, through appropriate national legislation, and introduce institutionally, new and environmentally sound development-oriented land-use policies;

(b) Support community-based people's organizations, especially farmers and pastoralists.

C. Developing and strengthening integrated development programmes for the eradication of poverty and promotion of alternative livelihood systems in areas prone to desertification

Basis for action

12.26. In areas prone to desertification and drought, current livelihood and resource-use systems are not able to maintain living standards. In most of the arid and semi-arid areas, the traditional livelihood systems based on agropastoral systems are often inadequate and unsustainable, particularly in view of the effects of drought and increasing demographic pressure. Poverty is a major factor in accelerating the rate of degradation and desertification. Action is therefore needed to rehabilitate and improve the agropastoral systems for sustainable management of rangelands, as well as alternative livelihood systems.

Objectives

12.27. The objectives of this programme area are:

(a) To create the capacity of village communities and pastoral groups to take charge of their development and the management of their land resources on a socially equitable and ecologically sound basis;

(b) To improve production systems in order to achieve greater productivity within approved programmes for conservation of national resources and in the framework of an integrated approach to rural development;

(c) To provide opportunities for alternative livelihoods as a basis for reducing pressure on land resources while at the same time providing additional sources of income, particularly for rural populations, thereby improving their standard of living.

Activities

(a) Management-related activities

12.28. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Adopt policies at the national level regarding a decentralized approach to land-resource management, delegating responsibility to rural organizations;

(b) Create or strengthen rural organizations in charge of village and pastoral land management;

(c) Establish and develop local, national and intersectoral mechanisms to handle environmental and developmental consequences of land tenure expressed in terms of land use and land ownership. Particular attention should be given to protecting the property rights of women and pastoral and nomadic groups living in rural areas;

(d) Create or strengthen village associations focused on economic activities of common pastoral interest (market gardening, transformation of agricultural products, livestock, herding, etc.);

(e) Promote rural credit and mobilization of rural savings through the establishment of rural banking systems;

(f) Develop infrastructure, as well as local production and marketing capacity, by involving the local people to promote alternative livelihood systems and alleviate poverty;

(g) Establish a revolving fund for credit to rural entrepreneurs and local groups to facilitate the establishment of cottage industries/business ventures and credit for input to agropastoral activities.

(b) Data and information

12.29. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Conduct socio-economic baseline studies in order to have a good understanding of the situation in the programme area regarding, particularly, resource and land tenure issues, traditional land-management practices and characteristics of production systems;

(b) Conduct inventory of natural resources (soil, water and vegetation) and their state of degradation, based primarily on the knowledge of the local population (e.g., rapid rural appraisal);

(c) Disseminate information on technical packages adapted to the social, economic and ecological conditions of each;

(d) Promote exchange and sharing of information concerning the development of alternative livelihoods with other agro-ecological regions.

(c) International and regional cooperation and coordination

12.30. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should:

(a) Promote cooperation and exchange of information among the arid and semi-arid land research institutions concerning techniques and technologies to improve land and labour productivity, as well as viable production systems;

(b) Coordinate and harmonize the implementation of programmes and projects funded by the international organization communities and non-governmental organizations that are directed towards the alleviation of poverty and promotion of an alternative livelihood system.

Means of implementation

(a) Financing and cost evaluation

12.31. The Conference secretariat has estimated the costs for this programme area in chapter 3 (Combating poverty) and chapter 14 (Promoting sustainable agriculture and rural development).

(b) Scientific and technological means

12.32. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should:

(a) Undertake applied research in land use with the support of local research institutions;

(b) Facilitate regular national, regional and interregional communication on and exchange of information and experience between extension officers and researchers;

(c) Support and encourage the introduction and use of technologies for the generation of alternative sources of incomes.

(c) Human resource development

12.33. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Train members of rural organizations in management skills and train agropastoralists in such special techniques as soil and water conservation, water harvesting, agroforestry and small-scale irrigation;

(b) Train extension agents and officers in the participatory approach to integrated land management.

(d) Capacity-building

12.34. Governments at the appropriate level, with the support of the relevant international and regional organizations, should establish and maintain mechanisms to ensure the integration into sectoral and national development plans and programmes of strategies for poverty alleviation among the inhabitants of lands prone to desertification.

D. Developing comprehensive anti-desertification programmes and integrating them into national development plans and national environmental planning

Basis for action

12.35. In a number of developing countries affected by desertification, the natural resource base is the main resource upon which the development process must rely. The social systems interacting with land resources make the problem much more complex, requiring an integrated approach to the planning and management of land resources. Action plans to combat desertification and drought should include management aspects of the environment and development, thus conforming with the approach of integrating national development plans and national environmental action plans.

Objectives

12.36. The objectives of this programme area are:

(a) To strengthen national institutional capabilities to develop appropriate anti-desertification programmes and to integrate them into national development planning;

(b) To develop and integrate strategic planning frameworks for the development, protection and management of natural resources in dryland areas into national development plans, including national plans to combat desertification, and environmental action plans in countries most prone to desertification;

(c) To initiate a long-term process for implementing and monitoring strategies related to natural resources management;

(d) To strengthen regional and international cooperation for combating desertification through, *inter alia*, the adoption of legal and other instruments.

Activities

(a) Management-related activities

12.37. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should:

(a) Establish or strengthen, national and local anti-desertification authorities within government and local executive bodies, as well as local committees/associations of land users, in all rural communities affected, with a view to organizing working cooperation between all actors concerned, from the grass-roots level (farmers and pastoralists) to the higher levels of government;

(b) Develop national plans of action to combat desertification and as appropriate, make them integral parts of national development plans and national environmental action plans;

(c) Implement policies directed towards improving land use, managing common lands appropriately, providing incentives to small farmers and pastoralists, involving women and encouraging private investment in the development of drylands;

(d) Ensure coordination among ministries and institutions working on anti-desertification programmes at national and local levels.

(b) Data and information

12.38. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should promote information exchange and cooperation with respect to national planning and programming among affected countries, *inter alia*, through networking.

(c) International and regional cooperation and coordination

12.39. The relevant international organizations, multilateral financial institutions, non-governmental organizations and bilateral agencies should strengthen their cooperation in assisting with the preparation of desertification control programmes and their integration into national planning strategies, with the establishment of national coordinating and systematic observation mechanisms and with the regional and global networking of these plans and mechanisms.

12.40. The General Assembly, at its forty-seventh session, should be requested to establish, under the aegis of the General Assembly, an intergovernmental negotiating committee for the elaboration of an international convention to combat desertification in in those countries experiencing serious drought and/or desertification, particularly in Africa, with a view to finalizing such a convention by June 1994.

Means of implementation

(a) Financing and cost evaluation

12.41. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $180 million, including about $90 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

12.42. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Develop and introduce appropriate improved sustainable agricultural and pastoral technologies that are socially and environmentally acceptable and economically feasible;

(b) Undertake applied study on the integration of environmental and developmental activities into national development plans.

(c) Human resource development

12.43. Governments at the appropriate level, with the support of the relevant international and regional organizations, should undertake nationwide major anti-desertification awareness/training campaigns within countries affected through existing national mass media facilities, educational networks and newly created or strengthened extension services. This should ensure people's access to knowledge of desertification and drought and to national plans of action to combat desertification.

(d) Capacity-building

12.44. Governments at the appropriate level, with the support of the relevant international and regional organizations, should establish and maintain mechanisms to ensure coordination of sectoral ministries and institutions, including local-level institutions and appropriate non-governmental organizations, in integrating anti-desertification programmes into national development plans and national environmental action plans.

E. Developing comprehensive drought preparedness and drought-relief schemes, including self-help arrangements, for drought-prone areas and designing programmes to cope with environmental refugees

Basis for action

12.45. Drought, in differing degrees of frequency and severity, is a recurring phenomenon throughout much of the developing world, especially Africa. Apart from the human toll - an estimated 3 million people died in the mid-1980s because of drought in sub-Saharan Africa - the economic costs of drought-related disasters are also high in terms of lost production, misused inputs and diversion of development resources.

12.46. Early-warning systems to forecast drought will make possible the implementation of drought-preparedness schemes. Integrated packages at the farm and watershed level, such as alternative cropping strategies, soil and water conservation and promotion of water harvesting techniques, could enhance the capacity of land to cope with drought and provide basic necessities, thereby minimizing the number of environmental refugees and the need for emergency drought relief. At the same time, contingency arrangements for relief are needed for periods of acute scarcity.

Objectives

12.47. The objectives of this programme area are:

(a) To develop national strategies for drought preparedness in both the short and long term, aimed at reducing the vulnerability of production systems to drought;

(b) To strengthen the flow of early-warning information to decision makers and land users to enable nations to implement strategies for drought intervention;

(c) To develop and integrate drought-relief schemes and means of coping with environmental refugees into national and regional development planning.

Activities

(a) Management-related activities

12.48. In drought-prone areas, Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Design strategies to deal with national food deficiencies in periods of production shortfall. These strategies should deal with issues of storage and stocks, imports, port facilities, food storage, transport and distribution;

(b) Improve national and regional capacity for agrometeorology and contingency crop planning. Agrometeorology links the frequency, content and regional coverage of weather forecasts with the requirements of crop planning and agricultural extension;

(c) Prepare rural projects for providing short-term rural employment to drought-affected households. The loss of income and entitlement to food is a common source of distress in times of drought. Rural works help to generate the income required to buy food for poor households;

(d) Establish contingency arrangements, where necessary, for food and fodder distribution and water supply;

(e) Establish budgetary mechanisms for providing, at short notice, resources for drought relief;

(f) Establish safety nets for the most vulnerable households.

(b) Data and information

12.49. Governments of affected countries, at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Implement research on seasonal forecasts to improve contingency planning and relief operations and allow preventive measures to be taken at the farm level, such as the selection of appropriate varieties and farming practices, in times of drought;

(b) Support applied research on ways of reducing water loss from soils, on ways of increasing the water absorption capacities of soils and on water harvesting techniques in drought-prone areas;

(c) Strengthen national early-warning systems, with particular emphasis on the area of risk-mapping, remote-sensing, agrometeorological modelling, integrated multidisciplinary crop-forecasting techniques and computerized food supply/demand analysis.

(c) International and regional cooperation and coordination

12.50. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Establish a system of stand-by capacities in terms of foodstock, logistical support, personnel and finance for a speedy international response to drought-related emergencies;

(b) Support programmes of the World Meteorological Organization (WMO) on agrohydrology and agrometeorology, the Programme of the Regional Training Centre for Agrometeorology and Operational Hydrology and their Applications (AGRHYMET), drought-monitoring centres and the African Centre of Meteorological Applications for Development (ACMAD), as well as the efforts of the Permanent Inter-State Committee on Drought Control in the Sahel (CILSS) and the Intergovernmental Authority for Drought and Development (IGADD);

(c) Support FAO programmes and other programmes for the development of national early-warning systems and food security assistance schemes;

(d) Strengthen and expand the scope of existing regional programmes and the activities of appropriate United Nations organs and organizations, such as the World Food Programme (WFP), the Office of the United Nations Disaster Relief Coordinator (UNDRO) and the United Nations Sudano-Sahelian Office as well as of non-governmental organizations, aimed at mitigating the effects of drought and emergencies.

Means of implementation

(a) Financing and cost evaluation

12.51. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.2 billion, including about $1.1 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

12.52. Governments at the appropriate level and drought-prone communities, with the support of the relevant international and regional organizations, should:

(a) Use traditional mechanisms to cope with hunger as a means of channelling relief and development assistance;

(b) Strengthen and develop national, regional and local interdisciplinary research and training capabilities for drought-prevention strategies.

(c) Human resource development

12.53. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Promote the training of decision makers and land users in the effective utilization of information from early-warning systems;

(b) Strengthen research and national training capabilities to assess the impact of drought and to develop methodologies to forecast drought.

(d) Capacity-building

12.54. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Improve and maintain mechanisms with adequate staff, equipment and finances for monitoring drought parameters to take preventive measures at regional, national and local levels;

(b) Establish interministerial linkages and coordinating units for drought monitoring, impact assessment and management of drought-relief schemes.

F. Encouraging and promoting popular participation and environmental education, focusing on desertification control and management of the effects of drought

Basis for action

12.55. The experience to date on the successes and failures of programmes and projects points to the need for popular support to sustain activities related to desertification and drought control. But it is necessary to go beyond the theoretical ideal of popular participation and to focus on obtaining actual active popular involvement, rooted in the concept of partnership. This implies the sharing of responsibilities and the mutual involvement of all parties. In this context, this programme area should be considered an essential supporting component of all desertification-control and drought-related activities.

Objectives

12.56. The objectives of this programme area are:

(a) To develop and increase public awareness and knowledge concerning desertification and drought, including the integration of environmental education in the curriculum of primary and secondary schools;

(b) To establish and promote true partnership between government authorities, at both the national and local levels, other executing agencies, non-governmental organizations and land users stricken by drought and desertification, giving land users a responsible role in the planning and execution processes in order to benefit fully from development projects;

(c) To ensure that the partners understand one another's needs, objectives and points of view by providing a variety of means such as training, public awareness and open dialogue;

(d) To support local communities in their own efforts in combating desertification, and to draw on the knowledge and experience of the populations concerned, ensuring the full participation of women and indigenous populations.

Activities

(a) Management-related activities

12.57. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Adopt policies and establish administrative structures for more decentralized decision-making and implementation;

(b) Establish and utilize mechanisms for the consultation and involvement of land users and for enhancing capability at the grass-roots level to identify and/or contribute to the identification and planning of action;

(c) Define specific programme/project objectives in cooperation with local communities; design local management plans to include such measures of progress, thereby providing a means of altering project design or changing management practices, as appropriate;

(d) Introduce legislative, institutional/organizational and financial measures to secure user involvement and access to land resources;

(e) Establish and/or expand favourable conditions for the provision of services, such as credit facilities and marketing outlets for rural populations;

(f) Develop training programmes to increase the level of education and participation of people, particularly women and indigenous groups, through, inter alia, literacy and the development of technical skills;

(g) Create rural banking systems to facilitate access to credit for rural populations, particularly women and indigenous groups, and to promote rural savings;

(h) Adopt appropriate policies to stimulate private and public investment.

(b) Data and information

12.58. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Review, develop and disseminate gender-disaggregated information, skills and know-how at all levels on ways of organizing and promoting popular participation;

(b) Accelerate the development of technological know-how, focusing on appropriate and intermediate technology;

(c) Disseminate knowledge about applied research results on soil and water issues, appropriate species, agricultural techniques and technological know-how.

(c) International and regional cooperation and coordination

12.59. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should:

(a) Develop programmes of support to regional organizations such as CILSS, IGADD, SADCC and the Arab Maghreb Union and other intergovernmental organizations in Africa and other parts of the world, to strengthen outreach programmes and increase the participation of non-governmental organizations together with rural populations;

(b) Develop mechanisms for facilitating cooperation in technology and promote such cooperation as an element of all external assistance and activities related to technical assistance projects in the public or private sector;

(c) Promote collaboration among different actors in environment and development programmes;

(d) Encourage the emergence of representative organizational structures to foster and sustain interorganizational cooperation.

Means of implementation

(a) Financing and cost evaluation

12.60. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.0 billion, including about $500 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

12.61. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should promote the development of indigenous know-how and technology transfer.

(c) Human resource development

12.62. Governments, at the appropriate level, and with the support of the relevant international and regional organizations, should:

(a) Support and/or strengthen institutions involved in public education, including the local media, schools and community groups;

(b) Increase the level of public education.

(d) Capacity-building

12.63. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should promote members of local rural organizations and train and appoint more extension officers working at the local level.

Chapter 13

MANAGING FRAGILE ECOSYSTEMS: SUSTAINABLE MOUNTAIN DEVELOPMENT

INTRODUCTION

13.1. Mountains are an important source of water, energy and biological diversity. Furthermore, they are a source of such key resources as minerals, forest products and agricultural products and of recreation. As a major ecosystem representing the complex and interrelated ecology of our planet, mountain environments are essential to the survival of the global ecosystem. Mountain ecosystems are, however, rapidly changing. They are susceptible to accelerated soil erosion, landslides and rapid loss of habitat and genetic diversity. On the human side, there is widespread poverty among mountain inhabitants and loss of indigenous knowledge. As a result, most global mountain areas are experiencing environmental degradation. Hence, the proper management of mountain resources and socio-economic development of the people deserves immediate action.

13.2. About 10 per cent of the world's population depends on mountain resources. A much larger percentage draws on other mountain resources, including and especially water. Mountains are a storehouse of biological diversity and endangered species.

13.3. Two programme areas are included in this chapter to further elaborate the problem of fragile ecosystems with regard to all mountains of the world. These are:

(a) Generating and strengthening knowledge about the ecology and sustainable development of mountain ecosystems;

(b) Promoting integrated watershed development and alternative livelihood opportunities.

PROGRAMME AREAS

A. Generating and strengthening knowledge about the ecology and sustainable development of mountain ecosystems

Basis for action

13.4. Mountains are highly vulnerable to human and natural ecological imbalance. Mountains are the areas most sensitive to all climatic changes in the atmosphere. Specific information on ecology, natural resource potential and socio-economic activities is essential. Mountain and hillside areas hold a rich variety of ecological systems. Because of their vertical dimensions, mountains create gradients of temperature, precipitation and insolation. A given mountain slope may include several climatic systems - such as tropical, subtropical, temperate and alpine - each of which represents a microcosm of a larger habitat diversity. There is, however, a lack of knowledge of mountain ecosystems. The creation of a global mountain database is therefore vital for launching programmes that contribute to the sustainable development of mountain ecosystems.

Objectives

13.5. The objectives of this programme area are:

(a) To undertake a survey of the different forms of soils, forest, water use, crop, plant and animal resources of mountain ecosystems, taking into account the work of existing international and regional organizations;

(b) To maintain and generate database and information systems to facilitate the integrated management and environmental assessment of mountain ecosystems, taking into account the work of existing international and regional organizations;

(c) To improve and build the existing land/water ecological knowledge base regarding technologies and agricultural and conservation practices in the mountain regions of the world, with the participation of local communities;

(d) To create and strengthen the communications network and information clearing-house for existing organizations concerned with mountain issues;

(e) To improve coordination of regional efforts to protect fragile mountain ecosystems through the consideration of appropriate mechanisms, including regional legal and other instruments;

(f) To generate information to establish databases and information systems to facilitate an evaluation of environmental risks and natural disasters in mountain ecosystems.

Activities

(a) Management-related activities

13.6. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Strengthen existing institutions or establish new ones at local, national and regional levels to generate a multidisciplinary land/water ecological knowledge base on mountain ecosystems;

(b) Promote national policies that would provide incentives to local people for the use and transfer of environment-friendly technologies and farming and conservation practices;

(c) Build up the knowledge base and understanding by creating mechanisms for cooperation and information exchange among national and regional institutions working on fragile ecosystems;

(d) Encourage policies that would provide incentives to farmers and local people to undertake conservation and regenerative measures;

(e) Diversify mountain economies, _inter alia_, by creating and/or strengthening tourism, in accordance with integrated management of mountain areas;

(f) Integrate all forest, rangeland and wildlife activities in such a way that specific mountain ecosystems are maintained;

(g) Establish appropriate natural reserves in representative species-rich sites and areas.

(b) Data and information

13.7. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Maintain and establish meteorological, hydrological and physical monitoring analysis and capabilities that would encompass the climatic diversity as well as water distribution of various mountain regions of the world;

(b) Build an inventory of different forms of soils, forests, water use, and crop, plant and animal genetic resources, giving priority to those under threat of extinction. Genetic resources should be protected _in situ_ by maintaining and establishing protected areas and improving traditional farming and animal husbandry activities and establishing programmes for evaluating the potential value of the resources;

(c) Identify hazardous areas that are most vulnerable to erosion, floods, landslides, earthquakes, snow avalanches and other natural hazards;

(d) Identify mountain areas threatened by air pollution from neighbouring industrial and urban areas.

(c) International and regional cooperation

13.8. National Governments and intergovernmental organizations should:

(a) Coordinate regional and international cooperation and facilitate an exchange of information and experience among the specialized agencies, the World Bank, IFAD and other international and regional organizations, national Governments, research institutions and non-governmental organizations working on mountain development;

(b) Encourage regional, national and international networking of people's initiatives and the activities of international, regional and local non-governmental organizations working on mountain development, such as the United Nations University (UNU), the Woodland Mountain Institutes (WMI), the International Center for Integrated Mountain Development (ICIMOD), the International Mountain Society (IMS), the African Mountain Association and the Andean Mountain Association, besides supporting those organizations in exchange of information and experience;

(c) Protect Fragile Mountain Ecosystem through the consideration of appropriate mechanisms including regional legal and other instruments.

Means of implementation

(a) Financing and cost evaluation

13.9. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $50 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

13.10. Governments at the appropriate level, with the support of the relevant international and regional organizations, should strengthen scientific research and technological development programmes, including diffusion through national and regional institutions, particularly in meteorology, hydrology, forestry, soil sciences and plant sciences.

(c) Human resource development

13.11. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should:

(a) Launch training and extension programmes in environmentally appropriate technologies and practices that would be suitable to mountain ecosystems;

(b) Support higher education through fellowships and research grants for environmental studies in mountains and hill areas, particularly for candidates from indigenous mountain populations;

(c) Undertake environmental education for farmers, in particular for women, to help the rural population better understand the ecological issues regarding the sustainable development of mountain ecosystems.

(d) Capacity-building

13.12. Governments at the appropriate level, with the support of the relevant international and regional organizations, should build up national and regional institutional bases that could carry out research, training and dissemination of information on the sustainable development of the economies of fragile ecosystems.

B. Promoting integrated watershed development and alternative livelihood opportunities

Basis for action

13.13. Nearly half of the world's population is affected in various ways by mountain ecology and the degradation of watershed areas. About 10 per cent of the Earth's population lives in mountain areas with higher slopes, while about 40 per cent occupies the adjacent medium- and lower-watershed areas. There are serious problems of ecological deterioration in these watershed areas. For example, in the hillside areas of the Andean countries of South America a large portion of the farming population is now faced with a rapid deterioration of land resources. Similarly, the mountain and upland areas of the Himalayas, South-East Asia and East and Central Africa, which make vital contributions to agricultural production, are threatened by cultivation of marginal lands due to expanding population. In many areas this is accompanied by excessive livestock grazing, deforestation and loss of biomass cover.

13.14. Soil erosion can have a devastating impact on the vast numbers of rural people who depend on rainfed agriculture in the mountain and hillside areas. Poverty, unemployment, poor health and bad sanitation are widespread. Promoting integrated watershed development programmes through effective participation of local people is a key to preventing further ecological imbalance. An integrated approach is needed for conserving, upgrading and using the natural resource base of land, water, plant, animal and human resources. In addition, promoting alternative livelihood opportunities, particularly through development of employment schemes that increase the productive base, will have a significant role in improving the standard of living among the large rural population living in mountain ecosystems.

Objectives

13.15. The objectives of this programme area are:

(a) By the year 2000, to develop appropriate land-use planning and management for both arable and non-arable land in mountain-fed watershed areas to prevent soil erosion, increase biomass production and maintain the ecological balance;

(b) To promote income-generating activities, such as sustainable tourism, fisheries and environmentally sound mining, and to improve infrastructure and social services, in particular to protect the livelihoods of local communities and indigenous people;

(c) To develop technical and institutional arrangements for affected countries to mitigate the effects of natural disasters through hazard-prevention measures, risk zoning, early-warning systems, evacuation plans and emergency supplies.

Activities

(a) Management-related activities

13.16. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Undertake measures to prevent soil erosion and promote erosion-control activities in all sectors;

(b) Establish task forces or watershed development committees, complementing existing institutions, to coordinate integrated services to support local initiatives in animal husbandry, forestry, horticulture and rural development at all administrative levels;

(c) Enhance popular participation in the management of local resources through appropriate legislation;

(d) Support non-governmental organizations and other private groups assisting local organizations and communities in the preparation of projects that would enhance participatory development of local people;

(e) Provide mechanisms to preserve threatened areas that could protect wildlife, conserve biological diversity or serve as national parks;

(f) Develop national policies that would provide incentives to farmers and local people to undertake conservation measures and to use environment-friendly technologies;

(g) Undertake income-generating activities in cottage and agro-processing industries, such as the cultivation and processing of medicinal and aromatic plants;

(h) Undertake the above activities, taking into account the need for full participation of women, including indigenous people and local communities, in development.

(b) Data and information

13.17. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Maintain and establish systematic observation and evaluation capacities at the national, state or provincial level to generate information for daily operations and to assess the environmental and socio-economic impacts of projects;

(b) Generate data on alternative livelihoods and diversified production systems at the village level on annual and tree crops, livestock, poultry, beekeeping, fisheries, village industries, markets, transport and income-earning opportunities, taking fully into account the role of women and integrating them into the planning and implementation process.

(c) International and regional cooperation

13.18. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Strengthen the role of appropriate international research and training institutes such as the Consultative Group on International Agricultural Research Centers (CGIAR) and the International Board for Soil Research and Management (IBSRAM), as well as regional research centres, such as the Woodland Mountain Institutes and the International Center for Integrated Mountain Development, in undertaking applied research relevant to watershed development;

(b) Promote regional cooperation and exchange of data and information among countries sharing the same mountain ranges and river basins, particularly those affected by mountain disasters and floods;

(c) Maintain and establish partnerships with non-governmental organizations and other private groups working in watershed development.

Means of implementation

(a) Financial and cost evaluation

13.19. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $13 billion, including about $1.9 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

13.20. Financing for the promotion of alternative livelihoods in mountain ecosystems should be viewed as part of a country's anti-poverty or alternative livelihoods programme, which is also discussed in chapter 3 (Combating poverty) and chapter 14 (Promoting sustainable agriculture and rural development) of Agenda 21.

(b) Scientific and technical means

13.21. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Consider undertaking pilot projects that combine environmental protection and development functions with particular emphasis on some of the traditional environmental management practices or systems that have a good impact on the environment;

(b) Generate technologies for specific watershed and farm conditions through a participatory approach involving local men and women, researchers and extension agents who will carry out experiments and trials on farm conditions;

(c) Promote technologies of vegetative conservation measures for erosion prevention, in situ moisture management, improved cropping technology, fodder production and agroforestry that are low-cost, simple and easily adopted by local people.

(c) Human resource development

13.22. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Promote a multidisciplinary and cross-sectoral approach in training and the dissemination of knowledge to local people on a wide range of issues, such as household production systems, conservation and utilization of arable and non-arable land, treatment of drainage lines and recharging of groundwater, livestock management, fisheries, agroforestry and horticulture;

(b) Develop human resources by providing access to education, health, energy and infrastructure;

(c) Promote local awareness and preparedness for disaster prevention and mitigation, combined with the latest available technology for early warning and forecasting.

(d) Capacity-building

13.23. Governments at the appropriate level, with the support of the relevant international and regional organizations, should develop and strengthen national centres for watershed management to encourage a comprehensive approach to the environmental, socio-economic, technological, legislative, financial and administrative aspects and provide support to policy makers, administrators, field staff and farmers for watershed development.

13.24. The private sector and local communities, in cooperation with national Governments, should promote local infrastructure development, including communication networks, mini- or micro-hydro development to support cottage industries, and access to markets.

Chapter 14

PROMOTING SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT

INTRODUCTION

14.1. By the year 2025, 83 per cent of the expected global population of 8.5 billion will be living in developing countries. Yet the capacity of available resources and technologies to satisfy the demands of this growing population for food and other agricultural commodities remains uncertain. Agriculture has to meet this challenge, mainly by increasing production on land already in use and by avoiding further encroachment on land that is only marginally suitable for cultivation.

14.2. Major adjustments are needed in agricultural, environmental and macroeconomic policy, at both national and international levels, in developed as well as developing countries, to create the conditions for sustainable agriculture and rural development (SARD). The major objective of SARD is to increase food production in a sustainable way and enhance food security. This will involve education initiatives, utilization of economic incentives and the development of appropriate and new technologies, thus ensuring stable supplies of nutritionally adequate food, access to those supplies by vulnerable groups, and production for markets; employment and income generation to alleviate poverty; and natural resource management and environmental protection.

14.3. The priority must be on maintaining and improving the capacity of the higher potential agricultural lands to support an expanding population. However, conserving and rehabilitating the natural resources on lower potential lands in order to maintain sustainable man/land ratios is also necessary. The main tools of SARD are policy and agrarian reform, participation, income diversification, land conservation and improved management of inputs. The success of SARD will depend largely on the support and participation of rural people, national Governments, the private sector and international cooperation, including technical and scientific cooperation.

14.4. The following programme areas are included in this chapter:

(a) Agricultural policy review, planning and integrated programming in the light of the multifunctional aspect of agriculture, particularly with regard to food security and sustainable development;

(b) Ensuring people's participation and promoting human resource development for sustainable agriculture;

(c) Improving farm production and farming systems through diversification of farm and non-farm employment and infrastructure development;

(d) Land-resource planning information and education for agriculture;

(e) Land conservation and rehabilitation;

(f) Water for sustainable food production and sustainable rural development;

(g) Conservation and sustainable utilization of plant genetic resources for food and sustainable agriculture;

(h) Conservation and sustainable utilization of animal genetic resources for sustainable agriculture;

(i) Integrated pest management and control in agriculture;

(j) Sustainable plant nutrition to increase food production;

(k) Rural energy transition to enhance productivity;

(l) Evaluation of the effects of ultraviolet radiation on plants and animals caused by the depletion of the stratospheric ozone layer.

PROGRAMME AREAS

A. Agricultural policy review, planning and integrated programmes in the light of the multifunctional aspect of agriculture, particularly with regard to food security and sustainable development

Basis for action

14.5. There is a need to integrate sustainable development considerations with agricultural policy analysis and planning in all countries, particularly in developing countries. Recommendations should contribute directly to development of realistic and operational medium- to long-term plans and programmes, and thus to concrete actions. Support to and monitoring of implementation should follow.

14.6. The absence of a coherent national policy framework for sustainable agriculture and rural development (SARD) is widespread and is not limited to the developing countries. In particular the economies in transition from planned to market-oriented systems need such a framework to incorporate environmental considerations into economic activities, including agriculture. All countries need to assess comprehensively the impacts of such policies on food and agriculture sector performance, food security, rural welfare and international trading relations as a means for identifying appropriate offsetting measures. The major thrust of food security in this case is to bring about a significant increase in agricultural production in a sustainable way and to achieve a substantial improvement in people's entitlement to adequate food and culturally appropriate food supplies.

14.7. Sound policy decisions pertaining to international trade and capital flows also necessitate action to overcome: (a) a lack of awareness of the environmental costs incurred by sectoral and macroeconomic policies and hence their threat to sustainability; (b) insufficient skills and experience in incorporating issues of sustainability into policies and programmes; and (c) inadequacy of tools of analysis and monitoring. 1/

Objectives

14.8. The objectives of this Programme area are:

(a) By 1995, to review and, where appropriate, establish a programme to integrate environmental and sustainable development with policy analysis for the food and agriculture sector and relevant macroeconomic policy analysis, formulation and implementation;

(b) To maintain and develop, as appropriate, operational multisectoral plans, programmes and policy measures, including programmes and measures to enhance sustainable food production and food security within the framework of sustainable development, not later than 1998;

(c) To maintain and enhance the ability of developing countries, particularly the least developed ones, to themselves manage policy, programming and planning activities, not later than 2005.

Activities

(a) Management-related activities

14.9. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Carry out national policy reviews related to food security, including adequate levels and stability of food supply and access to food by all households;

(b) Review national and regional agricultural policy in relation, *inter alia*, to foreign trade, price policy, exchange rate policies, agricultural subsidies and taxes, as well as organization for regional economic integration;

(c) Implement policies to influence land tenure and property rights positively with due recognition of the minimum size of land-holding required to maintain production and check further fragmentation;

(d) Consider demographic trends and population movements and identify critical areas for agricultural production;

(e) Formulate, introduce and monitor policies, laws and regulations and incentives leading to sustainable agricultural and rural development and improved food security and to the development and transfer of appropriate farm technologies, including, where appropriate, low-input sustainable agricultural (LISA) systems;

(f) Support national and regional early warning systems through food-security assistance schemes that monitor food supply and demand and factors affecting household access to food;

(g) Review policies with respect to improving harvesting, storage, processing, distribution and marketing of products at the local, national and regional levels;

(h) Formulate and implement integrated agricultural projects that include other natural resource activities, such as management of rangelands, forests, and wildlife, as appropriate;

(i) Promote social and economic research and policies that encourage sustainable agriculture development, particularly in fragile ecosystems and densely populated areas;

(j) Identify storage and distribution problems affecting food availability; support research, where necessary, to overcome these problems and cooperate with producers and distributors to implement improved practices and systems.

(b) Data and information

14.10. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Cooperate actively to expand and improve the information on early warning systems on food and agriculture at both regional and national levels;

(b) Examine and undertake surveys and research to establish baseline information on the status of natural resources relating to food and agricultural production and planning in order to assess the impacts of various uses on these resources, and develop methodologies and tools of analysis, such as environmental accounting.

(c) International and regional cooperation and coordination

14.11. United Nations agencies, such as FAO, the World Bank, IFAD and GATT, and regional organizations, bilateral donor agencies and other bodies should, within their respective mandates, assume a role in working with national Governments in the following activities:

(a) Implement integrated and sustainable agricultural development and food security strategies at the subregional level that use regional production and trade potentials, including organizations for regional economic integration, to promote food security;

(b) Encourage, in the context of achieving sustainable agricultural development and consistent with relevant internationally agreed principles on trade and environment, a more open and non-discriminatory trading system and the avoidance of unjustifiable trade barriers which together with other policies will facilitate the further integration of agricultural and environmental policies so as to make them mutually supportive;

(c) Strengthen and establish national, regional and international systems and networks to increase the understanding of the interaction between agriculture and the state of the environment, identify ecologically sound technologies and facilitate the exchange information on data sources, policies, and techniques and tools of analysis.

Means of implementation

(a) Financing and cost evaluation

14.12. The Conference secretariat has estimated the average total annual cost (1993-2000) on implementing the activities of this programme to be about $3 billion, including about $450 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.13. Governments at the appropriate level and with the support of the relevant international and regional organizations should assist farming households and communities to apply technologies related to improved food production and security, including storage, monitoring of production and distribution.

(c) Human resource development

14.14. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Involve and train local economists, planners and analysts to initiate national and international policy reviews and develop frameworks for sustainable agriculture;

(b) Establish legal measures to promote access of women to land and remove biases in their involvement in rural development.

(d) Capacity-building

14.15. Governments at the appropriate level, with the support of the relevant international and regional organizations, should strengthen ministries for agriculture, natural resources and planning.

B. Ensuring people's participation and promoting human resource development for sustainable agriculture

Basis for action

14.16. This component bridges policy and integrated resource management. The greater the degree of community control over the resources on which it relies, the greater will be the incentive for economic and human resources development. At the same time, policy instruments to reconcile long-run and short-run requirements must be set by national Governments. The approaches focus on fostering self-reliance and cooperation, providing information and supporting user-based organizations. Emphasis should be on management practices, building agreements for changes in resource utilization, the rights and duties associated with use of land, water and forests, the functioning of markets, prices, and the access to information, capital and inputs. This would require training and capacity-building to assume greater responsibilities in sustainable development efforts. 2/

Objectives

14.17. The objectives of this programme area are:

(a) To promote greater public awareness of the role of people's participation and people's organizations, especially women's groups, youth, indigenous people, local communities and small farmers, in sustainable agriculture and rural development;

(b) To ensure equitable access of rural people, particularly women, small farmers, landless and indigenous people, to land, water and forest resources and to technologies, financing, marketing, processing and distribution;

(c) To strengthen and develop the management and the internal capacities of rural people's organizations and extension services and to decentralize decision-making to the lowest community level.

Activities

(a) Management-related activities

14.18. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Develop and improve integrated agricultural extension services and facilities and rural organizations and undertake natural resource management and food security activities, taking into account the different needs of subsistence agriculture as well as market-oriented crops;

(b) Review and refocus existing measures to achieve wider access to land, water and forest resources and ensure equal rights of women and other disadvantaged groups, with particular emphasis on rural populations, indigenous people and local communities;

(c) Assign clear titles, rights and responsibilities for land and for individuals or communities to encourage investment in land resources;

(d) Develop guidelines for decentralization policies for rural development through reorganization and strengthening of rural institutions;

(e) Develop policies in extension, training, pricing, input distribution, credit and taxation to ensure necessary incentives and equitable access by the poor to production-support services;

(f) Provide support services and training, recognizing the variation in agricultural circumstances and practices by location; the optimal use of on-farm inputs and the minimal use of external inputs; optimal use of local natural resources and management of renewable energy sources; and the establishment of networks that deal with the exchange of information on alternative forms of agriculture.

(b) Data and information

14.19. Governments at the appropriate level, and with the support of the relevant international and regional organizations, should collect, analyse, and disseminate information on human resources, the role of Governments, local communities and non-governmental organizations in social innovation and strategies for rural development.

(c) International and regional cooperation and coordination

14.20. Appropriate international and regional agencies should:

(a) Reinforce their work with non-governmental organizations in collecting and disseminating information on people's participation and people's organizations, testing participatory development methods, training and education for human resource development and strengthening the management structures of rural organizations;

(b) Help develop information available through non-governmental organizations and promote an international ecological agricultural network to accelerate the development and implementation of ecological agriculture practices.

Means of implementation

(a) Financing and cost evaluation

14.21. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $4.4 billion, including about $650 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.22. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Encourage people's participation on farm technology development and transfer, incorporating indigenous ecological knowledge and practices;

(b) Launch applied research on participatory methodologies, management strategies and local organizations.

(c) Human resource development

14.23. Governments at the appropriate level, with the support of the relevant international and regional organizations, should provide management and technical training to government administrators and members of resource-user groups in the principles, practice and benefits of people's participation in rural development.

(d) Capacity-building

14.24. Governments at the appropriate level, with the support of the relevant international and regional organizations, should introduce management strategies and mechanisms, such as accounting and audit services for rural people's organizations and institutions for human resource development, and delegate administrative and financial responsibilities to local levels for decision-making, revenue-raising and expenditure.

C. Improving farm production and farming systems through diversification of farm and non-farm employment and infrastructure development

Basis for action

14.25. Agriculture needs to be intensified to meet future demands for commodities and to avoid further expansion onto marginal lands and encroachment on fragile ecosystems. Increased use of external inputs and development of specialized production and farming systems tend to increase vulnerability to environmental stresses and market fluctuations. There is, therefore, a need to intensify agriculture by diversifying the production systems for maximum efficiency in the utilization of local resources, while minimizing environmental and economic risks. Where intensification of farming systems is not possible, other on-farm and off-farm employment opportunities should be identified and developed, such as cottage industries, wildlife utilization, aquaculture and fisheries, non-farm activities, such as light village-based manufacturing, farm commodity processing, agribusiness, recreation and tourism, etc.

Objectives

14.26. The objectives of this programme area are:

(a) To improve farm productivity in a sustainable manner, as well as to increase diversification, efficiency, food security and rural incomes, while ensuring that risks to the ecosystem are minimized;

(b) To enhance the self-reliance of farmers in developing and improving rural infrastructure, and to facilitate the transfer of environmentally sound technologies for integrated production and farming systems, including indigenous technologies and the sustainable use of biological and ecological processes, including agroforestry, sustainable wildlife conservation and management, aquaculture, inland fisheries and animal husbandry;

(c) To create farm and non-farm employment opportunities, particularly among the poor and those living in marginal areas, taking into account the alternative livelihood proposal *inter alia* in dryland areas.

Activities

(a) Management-related activities

14.27. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Develop and disseminate to farming households integrated farm management technologies, such as crop rotation, organic manuring and other techniques involving reduced use of agricultural chemicals, multiple techniques for sources of nutrients and the efficient utilization of external inputs, while enhancing techniques for waste and by-product utilization and prevention of pre- and post-harvest losses, taking particular note of the role of women;

(b) Create non-farm employment opportunities through private small-scale agro-processing units, rural service centres and related infrastructural improvements;

(c) Promote and improve rural financial networks that utilize investment capital resources raised locally;

(d) Provide the essential rural infrastructure for access to agricultural inputs and services, as well as to national and local markets, and reduce food losses;

(e) Initiate and maintain farm surveys, on-farm testing of appropriate technologies and dialogue with rural communities to identify constraints and bottlenecks and find solutions;

(f) Analyse and identify possibilities for economic integration of agricultural and forestry activities, as well as water and fisheries, and to take effective measures to encourage forest management and growing of trees by farmers (farm forestry) as an option for resource development.

(b) Data and information

14.28. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Analyse the effects of technical innovations and incentives on farm-household income and well-being;

(b) Initiate and maintain on-farm and off-farm programmes to collect and record indigenous knowledge.

(c) International and regional cooperation and coordination

14.29. International institutions, such as FAO and IFAD, international agricultural research centres, such as CGIAR, and regional centres should diagnose the world's major agro-ecosystems, their extension, ecological and socio-economic characteristics, their susceptibility to deterioration and their productive potential. This could form the basis for technology development and exchange and for regional research collaboration.

Means of implementation

(a) Financing and cost evaluation

14.30. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about

$10 billion, including about $1.5 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.31. Governments at the appropriate level, with the support of the relevant international and regional organizations, should strengthen research on agricultural production systems in areas with different endowments and agro-ecological zones, including comparative analysis of the intensification, diversification and different levels of external and internal inputs.

(c) Human resource development

14.32. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Promote educational and vocational training for farmers and rural communities through formal and non-formal education;

(b) Launch awareness and training programmes for entrepreneurs, managers, bankers and traders in rural servicing and small-scale agro-processing techniques.

(d) Capacity-building

14.33. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Improve their organizational capacity to deal with issues related to off-farm activities and rural industry development;

(b) Expand credit facilities and rural infrastructure related to processing, transportation and marketing.

D. Land-resource planning, information and education for agriculture

Basis for action

14.34. Inappropriate and uncontrolled land uses are a major cause of degradation and depletion of land resources. Present land use often disregards the actual potentials, carrying capacities and limitations of land resources, as well as their diversity in space. It is estimated that the world's population, now at 5.4 billion, will be 6.25 billion by the turn of the century. The need to increase food production to meet the expanding needs of the population will put enormous pressure on all natural resources, including land.

14.35. Poverty and malnutrition are already endemic in many regions. The destruction and degradation of agricultural and environmental resources is a major issue. Techniques for increasing production and conserving soil and water resources are already available but are not widely or systematically applied. A systematic approach is needed for identifying land uses and production systems that are sustainable in each land and climate zone, including the economic, social and institutional mechanisms necessary for their implementation. 3/

Objectives

14.36. The objectives of this programme area are:

(a) To harmonize planning procedures, involve farmers in the planning process, collect land-resource data, design and establish databases, define land areas of similar capability, identify resource problems and values that need to be taken into account to establish mechanisms to encourage efficient and environmentally sound use of resources;

(b) To establish agricultural planning bodies at national and local levels to decide priorities, channel resources and implement programmes.

Activities

(a) Management-related activities

14.37. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Establish and strengthen agricultural land-use and land-resource planning, management, education and information at national and local levels;

(b) Initiate and maintain district and village agricultural land-resource planning, management and conservation groups to assist in problem identification, development of technical and management solutions, and project implementation.

(b) Data and information

14.38. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Collect, continuously monitor, update and disseminate information, whenever possible, on the utilization of natural resources and living conditions, climate, water and soil factors, and on land use, distribution of vegetation cover and animal species, utilization of wild plants, production systems and yields, costs and prices, and social and cultural considerations that affect agricultural and adjacent land use;

(b) Establish programmes to provide information, promote discussion and encourage the formation of management groups.

(c) International and regional cooperation and coordination

14.39. The appropriate United Nations agencies and regional organizations should:

(a) Strengthen or establish international, regional and subregional technical working groups with specific terms of reference and budgets to promote the integrated use of land resources for agriculture, planning, data collection and diffusion of simulation models of production and information dissemination;

(b) Develop internationally acceptable methodologies for the establishment of databases, description of land uses and multiple goal optimization.

Means of implementation

(a) Financing and cost evaluation

14.40. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.7 billion, including about $250 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.41. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Develop databases and geographical information systems to store and display physical, social and economic information pertaining to agriculture, and the definition of ecological zones and development areas;

(b) Select combinations of land uses and production systems appropriate to land units through multiple goal optimization procedures, and strengthen delivery systems and local community participation;

(c) Encourage integrated planning at the watershed and landscape level to reduce soil loss and protect surface and groundwater resources from chemical pollution.

(c) Human resource development

14.42. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Train professionals and planning groups at national, district and village levels through formal and informal instructional courses, travel and interaction;

(b) Generate discussion at all levels on policy, development and environmental issues related to agricultural land use and management, through media programmes, conferences and seminars.

(d) Capacity-building

14.43. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Establish land-resource mapping and planning units at national, district and village levels to act as focal points and links between institutions and disciplines, and between Governments and people;

(b) Establish or strengthen Governments and international institutions with responsibility for agricultural resource survey, management and development; rationalize and strengthen legal frameworks; and provide equipment and technical assistance.

E. Land conservation and rehabilitation

Basis for action

14.44. Land degradation is the most important environmental problem affecting extensive areas of land in both developed and developing countries. The problem of soil erosion is particularly acute in developing countries, while problems of salinization, waterlogging, soil pollution and loss of soil fertility are increasing in all countries. Land degradation is serious because the productivity of huge areas of land is declining just when populations are increasing rapidly and the demand on the land is growing to produce more food, fibre and fuel. Efforts to control land degradation, particularly in developing countries, have had limited success to date. Well planned, long-term national and regional land conservation and rehabilitation programmes, with strong political support and adequate funding, are now needed. While land-use planning and land zoning, combined with better land management, should provide long-term solutions, it is urgent to arrest land degradation and launch conservation and rehabilitation programmes in the most critically affected and vulnerable areas.

Objectives

14.45. The objectives of this programme area are:

(a) By the year 2000, to review and initiate, as appropriate, national land-resource surveys, detailing the location, extent and severity of land degradation;

(b) To prepare and implement comprehensive policies and programmes leading to the reclamation of degraded lands and the conservation of areas at risk, as well as improve the general planning, management and utilization of land resources and preserve soil fertility for sustainable agricultural development.

Activities

(a) Management-related activities

14.46. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Develop and implement programmes to remove and resolve the physical, social and economic causes of land degradation, such as land tenure, appropriate trading systems and agricultural pricing structures, which lead to inappropriate land-use management;

(b) Provide incentives and, where appropriate and possible, resources for the participation of local communities in the planning, implementation and maintenance of their own conservation and reclamation programmes;

(c) Develop and implement programmes for the rehabilitation of land degraded by water-logging and salinity;

(d) Develop and implement programmes for the progressive use of non-cultivated land with agricultural potential in a sustainable way.

(b) Data and information

14.47. Governments, at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Conduct periodic surveys to assess the extent and state of its land resources;

(b) Strengthen and establish national land-resource data banks, including identification of the location, extent and severity of existing land degradation, as well as areas at risk, and evaluate the progress of the conservation and rehabilitation programmes launched in this regard;

(c) Collect and record information on indigenous conservation and rehabilitation practices and farming systems as a basis for research and extension programmes.

(c) International and regional cooperation and coordination

14.48. The appropriate United Nations agencies, regional organizations and non-governmental organizations should:

(a) Develop priority conservation and rehabilitation programmes with advisory services to Governments and regional organizations;

(b) Establish regional and subregional networks for scientists and technicians to exchange experiences, develop joint programmes and spread successful technologies on land conservation and rehabilitation.

Means of implementation

(a) Financing and cost evaluation

14.49. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $5 billion, including about $800 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.50. Governments at the appropriate level, with the support of the relevant international and regional organizations, should help farming household communities to investigate and promote site-specific technologies and farming systems that conserve and rehabilitate land, while increasing agricultural production, including conservation tillage agroforestry, terracing and mixed cropping.

(c) Human resource development

14.51. Governments at the appropriate level, with the support of the relevant international and regional organizations, should train field staff and land users in indigenous and modern techniques of conservation and rehabilitation and should establish training facilities for extension staff and land users.

(d) Capacity-building

14.52. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Develop and strengthen national research institutional capacity to identify and implement effective conservation and rehabilitation practices that are appropriate to the existing socio-economic physical conditions of the land users;

(b) Coordinate all land conservation and rehabilitation policies, strategies and programmes with related ongoing programmes, such as national environment action plans, the Tropical Forestry Action Plan and national development programmes.

F. Water for sustainable food production and sustainable rural development

14.53. This programme area is included in chapter 18 (Protection of the quality and supply of freshwater resources), programme area F.

G. Conservation and sustainable utilization of plant genetic resources for food and sustainable agriculture

Basis for action

14.54. Plant genetic resources for agriculture (PGRFA) are an essential resource to meet future needs for food. Threats to the security of these resources are growing, and efforts to conserve, develop and use genetic diversity are underfunded and understaffed. Many existing gene banks provide inadequate security and, in some instances, the loss of plant genetic diversity in gene banks is as great as it is in the field.

14.55. The primary objective is to safeguard the world's genetic resources while preserving them to use sustainably. This includes the development of measures to facilitate the conservation and use of plant genetic resources, networks of *in situ* conservation areas and use of tools such as *ex situ* collections and germ plasma banks. Special emphasis could be placed on the building of endogenous capacity for characterization, evaluation and utilization of PGRFA, particularly for the minor crops and other underutilized or non-utilized species of food and agriculture, including tree species for agro-forestry. Subsequent action could be aimed at consolidation and efficient management of networks of *in situ* conservation areas and use of tools such as *ex situ* collections and germ plasma banks.

14.56. Major gaps and weaknesses exist in the capacity of existing national and international mechanisms to assess, study, monitor and use plant genetic resources to increase food production. Existing institutional capacity, structures and programmes are generally inadequate and largely underfunded. There is genetic erosion of invaluable crop species. Existing diversity in crop species is not used to the extent possible for increased food production in a sustainable way. 4/

Objectives

14.57. The objectives of this programme area are:

(a) To complete the first regeneration and safe duplication of existing ex situ collections on a world-wide basis as soon as possible;

(b) To collect and study plants useful for increasing food production through joint activities, including training, within the framework of networks of collaborating institutions;

(c) Not later than the year 2000, to adopt policies and strengthen or establish programmes for in situ on-farm and ex situ conservation and sustainable use of plant genetic resources for food and agriculture, integrated into strategies and programmes for sustainable agriculture;

(d) To take appropriate measures for the fair and equitable sharing of benefits and results of research and development in plant breeding between the sources and users of plant genetic resources.

Activities

(a) Management-related activities

14.58. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Develop and strengthen institutional capacity, structures and programmes for conservation and use of PGRFA;

(b) Strengthen and establish research in the public domain on PGRFA evaluation and utilization, with the objectives of sustainable agriculture and rural development in view;

(c) Develop multiplication/propagation, exchange and dissemination facilities for PGRFAs (seeds and planting materials), particularly in developing countries and monitor, control and evaluate plant introductions;

(d) Prepare plans or programmes of priority action on conservation and sustainable use of PGRFA, based, as appropriate, on country studies on PGRFA;

(e) Promote crop diversification in agricultural systems where appropriate, including new plants with potential value as food crops;

(f) Promote utilization as well as research on poorly known, but potentially useful, plants and crops, where appropriate;

(g) Strengthen national capabilities for utilization of PGRFA, plant breeding and seed production capabilities, both by specialized institutions and farming communities.

(b) Data and information

14.59. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Develop strategies for networks of *in situ* conservation areas and use of tools such as on-farm *ex situ* collections, germplasm banks and related technologies;

(b) Establish *ex situ* base collection networks;

(c) Review periodically and report on the situation on PGRFA, using existing systems and procedures;

(d) Characterize and evaluate PGRFA material collected, disseminate information to facilitate the use of PGRFA collections and assess genetic variation in collections.

(c) International and regional cooperation and coordination

14.60. The appropriate United Nations agencies and regional organizations should:

(a) Strengthen the Global System on the Conservation and Sustainable Use of PGRFA by, *inter alia*, accelerating the development of the Global Information and Early Warning System to facilitate the exchange of information; developing ways to promote the transfer of environmentally sound technologies, in particular to developing countries; and taking further steps to realize farmers' rights;

(b) Develop subregional, regional and global networks of PGRFA *in situ* in protected areas;

(c) Prepare periodic state of the world reports on PGRFA;

(d) Prepare a rolling global cooperative plan of action on PGRFA;

(e) Promote, for 1994, the Fourth International Technical Conference on the Conservation and Sustainable Use of PGRFA, which is to adopt the first state of the world report and the first global plan of action on the conservation and sustainable use of PGRFA;

(f) Adjust the Global System for the Conservation and Sustainable Use of PGRFA in line with the outcome of the negotiations of a convention on biological diversity.

Means of implementation

(a) Financing and cost evaluation

14.61. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $600 million, including about $300 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.62. Governments, at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Develop basic science research in such areas as plant taxonomy and phytogeography, utilizing recent developments, such as computer sciences, molecular genetics and *in vitro* cryopreservation;

(b) Develop major collaborative projects between research programmes in developed and developing countries, particularly for the enhancement of poorly known or neglected crops;

(c) Promote cost-effective technologies for keeping duplicate sets of *ex situ* collections (which can also be used by local communities);

(d) Develop further conservation sciences in relation to *in situ* conservation and technical means to link it with *ex situ* conservation efforts.

(c) Human resource development

14.63. Governments at the appropriate level and with the support of the relevant international and regional organizations should:

(a) Promote training programmes at both undergraduate and post-graduate levels in conservation sciences for running PGRFA facilities and for the design and implementation of national programmes in PGRFA;

(b) Raise the awareness of agricultural extension services in order to link PGRFA activities with user communities;

(c) Develop training materials to promote conservation and utilization of PGRFA at the local level.

(d) Capacity-building

14.64. Governments at the appropriate level, with the support of the relevant international and regional organizations, should establish national policies to provide legal status for and strengthen legal aspects of PGRFA, including long-term financial commitments for germplasm collections and implementation of activities in PGRFA.

H. Conservation and sustainable utilization of animal genetic resources for sustainable agriculture

Basis for action

14.65. The need for increased quantity and quality of animal products and for draught animals calls for conservation of the existing diversity of animal breeds to meet future requirements, including those for use in biotechnology. Some local animal breeds, in addition to their socio-cultural value, have unique attributes for adaptation, disease resistance and specific uses and should be preserved. These local breeds are threatened by extinction as a result of the introduction of exotic breeds and of changes in livestock production systems.

Objectives

14.66. The objectives of this programme area are:

(a) To enumerate and describe all breeds of livestock used in animal agriculture in as broad a way as possible and begin a 10-year programme of action;

(b) To establish and implement action programmes to identify breeds at risk, together with the nature of the risk and appropriate preservation measures;

(c) To establish and implement development programmes for indigenous breeds in order to guarantee their survival, avoiding the risk of their being replaced by breed substitution or cross-breeding programmes.

Activities

(a) Management-related activities

14.67. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Draw up breed preservation plans, for endangered populations, including semen/embryo collection and storage, farm-based conservation of indigenous stock or *in situ* preservation;

(b) Plan and initiate breed development strategies;

(c) Select indigenous populations on the basis of regional importance and genetic uniqueness, for a 10-year programme, followed by selection of an additional cohort of indigenous breeds for development.

(b) Data and information

14.68. Governments at the appropriate level, with the support of the relevant international and regional organizations, should prepare and complete national inventories of available animal genetic resources. Cryogenic storage could be given priority over characterization and evaluation. Training of nationals in conservation and assessment techniques would be given special attention.

(c) International and regional cooperation and coordination

14.69. The appropriate United Nations and other international and regional agencies should:

(a) Promote the establishment of regional gene banks to the extent that they are justified, based on principles of technical cooperation among developing countries;

(b) Process, store and analyse animal genetic data at the global level, including the establishment of a world watch list and an early warning system for endangered breeds; global assessment of scientific and intergovernmental guidance of the programme and review of regional and national activities; development of methodologies, norms and standards (including international agreements); monitoring of their implementation; and related technical and financial assistance;

(c) Prepare and publish a comprehensive database of animal genetic resources, describing each breed, its derivation, its relationship with other breeds, effective population size and a concise set of biological and production characteristics;

(d) Prepare and publish a world watch list on farm animal species at risk to enable national Governments to take action to preserve endangered breeds and to seek technical assistance, where necessary.

Means of implementation

(a) Financing and cost evaluation

14.70. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $200 million, including about $100 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.71. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Use computer-based data banks and questionnaires to prepare a global inventory/world watch list;

(b) Using cryogenic storage of germplasm, preserve breeds at serious risk and other material from which genes can be reconstructed.

(c) Human resource development

14.72. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Sponsor training courses for nationals to obtain the necessary expertise for data collection and handling and for the sampling of genetic material;

(b) Enable scientists and managers to establish an information base for indigenous livestock breeds and promote programmes to develop and conserve essential livestock genetic material.

(d) Capacity-building

14.73. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Establish in-country facilities for artificial insemination centres and *in situ* breeding farms;

(b) Promote in-country programmes and related physical infrastructure for animal livestock conservation and breed development, as well as for strengthening national capacities to take preventive action when breeds are endangered.

I. Integrated pest management and control in agriculture

Basis for action

14.74. World food demand projections indicate an increase of 50 per cent by the year 2000 which will more than double again by 2050. Conservative estimates put pre-harvest and post-harvest losses caused by pests between 25 and 50 per cent. Pests affecting animal health also cause heavy losses and in many areas prevent livestock development. Chemical control of agricultural pests has dominated the scene, but its overuse has adverse effects on farm budgets, human health and the environment, as well as on international trade. New pest problems continue to develop. Integrated pest management, which combines biological control, host plant resistance and appropriate farming practices and minimizes the use of pesticides, is the best option for the future, as it guarantees yields, reduces costs, is environmentally friendly and contributes to the sustainability of agriculture. Integrated pest management should go hand in hand with appropriate pesticide management to allow for pesticide regulation and control, including trade, and for the safe handling and disposal of pesticides, particularly those that are toxic and persistent.

Objectives

14.75. The objectives of this programme area are:

(a) Not later than the year 2000, to improve and implement plant protection and animal health services, including mechanisms to control the distribution and use of pesticides, and to implement the International Code of Conduct on the Distribution and Use of Pesticides;

(b) To improve and implement programmes to put integrated pest-management practices within the reach of farmers through farmer networks, extension services and research institutions;

(c) Not later than the year 1998, to establish operational and interactive networks among farmers, researchers and extension services to promote and develop integrated pest management.

Activities

(a) Management-related activities

14.76. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Review and reform national policies and the mechanisms that would ensure the safe and appropriate use of pesticides - for example, pesticide pricing, pest control brigades, price-structure of inputs and outputs and integrated pest-management policies and action plans;

(b) Develop and adopt efficient management systems to control and monitor the incidence of pests and disease in agriculture and the distribution and use of pesticides at the country level;

(c) Encourage research and development into pesticides that are target-specific and readily degrade into harmless constituent parts after use;

(d) Ensure that pesticide labels provide farmers with understandable information about safe handling, application and disposal.

(b) Data and information

14.77. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Consolidate and harmonize existing information and programmes on the use of pesticides that have been banned or severely restricted in different countries;

(b) Consolidate, document and disseminate information on biological control agents and organic pesticides, as well as on traditional and other relevant knowledge and skills regarding alternative non-chemical ways of controlling pests;

(c) Undertake national surveys to establish baseline information on the use of pesticides in each country and the side-effects on human health and environment, and also undertake appropriate education.

(c) International and regional cooperation and coordination

14.78. Appropriate United Nations agencies and regional organizations should:

(a) Establish a system for collecting, analysing and disseminating data on the quantity and quality of pesticides used every year and their impact on human health and the environment;

(b) Strengthen regional interdisciplinary projects and establish integrated pest management (IPM) networks to demonstrate the social, economic and environmental benefits of IPM for food and cash crops in agriculture;

(c) Develop proper IPM, comprising the selection of the variety of biological, physical and cultural controls, as well as chemical controls, taking into account specific regional conditions.

Means of implementation

(a) Financing and cost evaluation

14.79. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.9 billion, including about $285 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.80. Governments at the appropriate level, with the support of the relevant international and regional organizations, should launch on-farm research in the development of non-chemical alternative pest management technologies.

(c) Human resource development

14.81. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Prepare and conduct training programmes on approaches and techniques for integrated pest management and control of pesticide use, to inform policy makers, researchers, non-governmental organizations and farmers;

(b) Train extension agents and involve farmers and women's groups in crop health and alternative non-chemical ways of controlling pests in agriculture.

(d) Capacity-building

14.82. Governments at the appropriate level, with the support of the relevant international and regional organizations, should strengthen national public administrations and regulatory bodies in the control of pesticides and the transfer of technology for integrated pest management.

J. Sustainable plant nutrition to increase food production

Basis for action

14.83. Plant nutrient depletion is a serious problem resulting in loss of soil fertility, particularly in developing countries. To maintain soil productivity, the FAO sustainable plant nutrition programmes could be helpful. In sub-Saharan Africa, nutrient output from all sources currently exceeds inputs by a factor of three or four, the net loss being estimated at some 10 million metric tons per year. As a result, more marginal lands and fragile natural ecosystems are put under agricultural use, thus creating further land degradation and other environmental problems. The integrated plant nutrition approach aims at ensuring a sustainable supply of plant nutrients to increase future yields without harming the environment and soil productivity.

14.84. In many developing countries, population growth rates exceed 3 per cent a year, and national agricultural production has fallen behind food demand. In these countries the goal should be to increase agricultural production by at least 4 per cent a year, without destroying the soil fertility. This will require increasing agricultural production in high-potential areas through efficiency in the use of inputs. Trained labour, energy supply, adapted tools and technologies, plant nutrients and soil enrichment will all be essential.

Objectives

14.85. The objectives of this programme area are:

(a) Not later than the year 2000, to develop and maintain in all countries the integrated plant nutrition approach, and to optimize availability of fertilizer and other plant nutrient sources;

(b) Not later than the year 2000, to establish and maintain institutional and human infrastructure to enhance effective decision-making on soil productivity;

(c) To develop and make available national and international know-how to farmers, extension agents, planners and policy makers on environmentally sound new and existing technologies and soil-fertility management strategies for application in promoting sustainable agriculture.

Activities

(a) Management-related activities

14.86. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Formulate and apply strategies that will enhance soil fertility maintenance to meet sustainable agricultural production and adjust the relevant agricultural policy instruments accordingly;

(b) Integrate organic and inorganic sources of plant nutrients in a system to sustain soil fertility and determine mineral fertilizer needs;

(c) Determine plant nutrient requirements and supply strategies and optimize the use of both organic and inorganic sources, as appropriate, to increase farming efficiency and production;

(d) Develop and encourage processes for the recycling of organic and inorganic waste into the soil structure, without harming the environment, plant growth and human health.

(b) Data and information

14.87. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Assess "national accounts" for plant nutrients, including supplies (inputs) and losses (outputs) and prepare balance sheets and projections by cropping systems;

(b) Review technical and economic potentials of plant nutrient sources, including national deposits, improved organic supplies, recycling, wastes, topsoil produced from discarded organic matter and biological nitrogen fixation.

(c) International and regional cooperation and coordination

14.88. The appropriate United Nations agencies, such as FAO, the international agricultural research institutes, and non-governmental organizations should collaborate in carrying out information and publicity campaigns about the integrated plant nutrients approach, efficiency of soil productivity and their relationship to the environment.

Means of implementation

(a) Financing and cost evaluation

14.89. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $3.2 billion, including about $475 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.90. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Develop site-specific technologies at benchmark sites and farmers' fields that fit prevailing socio-economic and ecological conditions through research that involves the full collaboration of local populations;

(b) Reinforce interdisciplinary international research and transfer of technology in cropping and farming systems research, improved *in situ* biomass production techniques, organic residue management and agroforestry technologies.

(c) Human resource development

14.91. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Train extension officers and researchers in plant nutrient management, cropping systems and farming systems, and in economic evaluation of plant nutrient impact;

(b) Train farmers and women's groups in plant nutrition management, with special emphasis on topsoil conservation and production.

(d) Capacity-building

14.92. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Develop suitable institutional mechanisms for policy formulation to monitor and guide the implementation of integrated plant nutrition programmes through an interactive process involving farmers, research, extension services and other sectors of society;

(b) Where appropriate, strengthen existing advisory services and train staff, develop and test new technologies and facilitate the adoption of practices to upgrade and maintain full productivity of the land.

K. Rural energy transition to enhance productivity

Basis for action

14.93. Energy supplies in many countries are not commensurate with their development needs and are highly priced and unstable. In rural areas of the developing countries, the chief sources of energy are fuelwood, crop residues and manure, together with animal and human energy. More intensive energy inputs are required for increased productivity of human labour and for income-generation. To this end, rural energy policies and technologies should promote a mix of cost-effective fossil and renewable energy sources that is itself sustainable and ensures sustainable agricultural development. Rural areas provide energy supplies in the form of wood. The full potential of agriculture and agroforestry, as well as common property resources, as sources of renewable energy, is far from being realized. The attainment of sustainable rural development is intimately linked with energy demand and supply patterns. 5/

Objectives

14.94. The objectives of this programme area are:

(a) Not later than the year 2000, to initiate and encourage a process of environmentally sound energy transition in rural communities, from unsustainable energy sources, to structured and diversified energy sources by making available alternative new and renewable sources of energy;

(b) To increase the energy inputs available for rural household and agro-industrial needs through planning and appropriate technology transfer and development;

(c) To implement self-reliant rural programmes favouring sustainable development of renewable energy sources and improved energy efficiency.

Activities

(a) Management-related activities

14.95. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Promote pilot plans and projects consisting of electrical, mechanical and thermal power (gasifiers, biomass, solar driers, wind-pumps and combustion systems) that are appropriate and likely to be adequately maintained;

(b) Initiate and promote rural energy programmes supported by technical training, banking and related infrastructure;

(c) Intensify research and the development, diversification and conservation of energy, taking into account the need for efficient use and environmentally sound technology.

(b) Data and information

14.96. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Collect and disseminate data on rural energy supply and demand patterns related to energy needs for households, agriculture and agro-industry;

(b) Analyse sectoral energy and production data in order to identify rural energy requirements.

(c) International and regional cooperation and coordination

14.97. The appropriate United Nations agencies and regional organizations should, drawing on the experience and available information of non-governmental organizations in this field, exchange country and regional experience on rural energy planning methodologies in order to promote efficient planning and select cost-effective technologies.

Means of implementation

(a) Financing and cost evaluation

14.98. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.8 billion per year, including about $265 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, _inter alia_, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

14.99. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Intensify public and private sector research in developing and industrialized countries on renewable sources of energy for agriculture;

(b) Undertake research and transfer of energy technologies in biomass and solar energy to agricultural production and post-harvest activities.

(c) Human resource development

14.100. Governments at the appropriate level, with the support of the relevant international and regional organizations, should enhance public awareness of rural energy problems, stressing the economic and environmental advantages of renewable energy sources.

(d) Capacity-building

14.101. Governments at the appropriate level, with the support of the relevant international and regional organizations, should:

(a) Establish national institutional mechanisms for rural energy planning and management that would improve efficiency in agricultural productivity and reach the village and household level;

(b) Strengthen extension services and local organizations to implement plans and programmes for new and renewable sources of energy at the village level.

L. Evaluation of the effects of ultraviolet radiation on plants and animals caused by the depletion of the stratospheric ozone layer

Basis for action

14.102. The increase of ultraviolet radiation as a consequence of the depletion of the stratospheric ozone layer is a phenomenon that has been recorded in different regions of the world, particularly in the southern hemisphere. Consequently, it is important to evaluate its effects on plant and animal life, as well as on sustainable agricultural development.

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The objective of this programme area is to undertake research to ıe the effects of increased ultraviolet radiation resulting from ›heric ozone layer depletion on the Earth's surface, and on plant and .ife in affected regions, as well as its impact on agriculture, and to as appropriate, strategies aimed at mitigating its adverse effects.

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ıagement-related activities

In affected regions, Governments at the appropriate level, with the of the relevant international and regional organizations, should take ›ssary measures, through institutional cooperation, to facilitate the ıtation of research and evaluation regarding the effects of enhanced ›let radiation on plant and animal life, as well as on agricultural ies, and consider taking appropriate remedial measures.

Notes

Some of the issues in this programme area are presented in chapter 3 ing poverty).

Some of the issues in this programme area are discussed in chapter 8 ating environment and development in decision-making) and in chapter 37 al mechanisms and international cooperation for capacity-building in ing countries).

Some of the issues are presented in chapter 10 (Integrated approach planning and management of land resources).

The activities of this programme area are related to some of the ies in chapter 15 (Conservation of biological diversity).

The activities of this programme area are related to some of the ies in chapter 9 (Protection of the atmosphere).

Chapter 15

CONSERVATION OF BIOLOGICAL DIVERSITY

INTRODUCTION

15.1. The objectives and activities in this chapter of Agenda 21 are intended to improve the conservation of biological diversity and the sustainable use of biological resources, as well as to support the Convention on Biological Diversity.

15.2. Our planet's essential goods and services depend on the variety and variability of genes, species, populations and ecosystems. Biological resources feed and clothe us and provide housing, medicines and spiritual nourishment. The natural ecosystems of forests, savannahs, pastures and rangelands, deserts, tundras, rivers, lakes and seas contain most of the Earth's biodiversity. Farmers' fields and gardens are also of great importance as repositories, while gene banks, botanical gardens, zoos and other germplasm repositories make a small but significant contribution. The current decline in biodiversity is largely the result of human activity and represents a serious threat to human development.

PROGRAMME AREA

Conservation of biological diversity

Basis for action

15.3. Despite mounting efforts over the past 20 years, the loss of the world's biological diversity, mainly from habitat destruction, over-harvesting, pollution and the inappropriate introduction of foreign plants and animals, has continued. Biological resources constitute a capital asset with great potential for yielding sustainable benefits. Urgent and decisive action is needed to conserve and maintain genes, species and ecosystems, with a view to the sustainable management and use of biological resources. Capacities for the assessment, study and systematic observation and evaluation of biodiversity need to be reinforced at national and international levels. Effective national action and international cooperation is required for the *in situ* protection of ecosystems, for the *ex situ* conservation of biological and genetic resources and for the enhancement of ecosystem functions. The participation and support of local communities are elements essential to the success of such an approach. Recent advances in biotechnology have pointed up the likely potential for agriculture, health and welfare and for the environmental purposes of the genetic material contained in plants, animals and micro-organisms. At the same time, it is particularly important in this context to stress that States have the sovereign right to exploit their own biological resources pursuant to their environmental policies, as well as the responsibility to conserve their biodiversity and use their biological resources sustainably, and to ensure that activities within their jurisdiction or control do not cause damage to the biological diversity of other States or of areas beyond the limits of national jurisdiction.

Objectives

15.4. Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and regional, intergovernmental and non-governmental organizations, the private sector and financial institutions, and taking into consideration indigenous people and their communities, as well as social and economic factors, should:

(a) Press for the early entry into force of the Convention on Biological Diversity, with the widest possible participation;

(b) Develop national strategies for the conservation of biological diversity and the sustainable use of biological resources;

(c) Integrate strategies for the conservation of biological diversity and the sustainable use of biological resources into national development strategies and/or plans;

(d) Take appropriate measures for the fair and equitable sharing of benefits derived from research and development and use of biological and genetic resources, including biotechnology, between the sources of those resources and those who use them;

(e) Carry out country studies, as appropriate, on the conservation of biological diversity and the sustainable use of biological resources, including analyses of relevant costs and benefits, with particular reference to socio-economic aspects;

(f) Produce regularly updated world reports on biodiversity based upon national assessments;

(g) Recognize and foster the traditional methods and the knowledge of indigenous people and their communities, emphasizing the particular role of women, relevant to the conservation of biological diversity and the sustainable use of biological resources, and ensure the opportunity for the participation of those groups in the economic and commercial benefits derived from the use of such traditional methods and knowledge; 1/

(h) Implement mechanisms for the improvement, generation, development and sustainable use of biotechnology and its safe transfer, particularly to developing countries, taking account the potential contribution of biotechnology to the conservation of biological diversity and the sustainable use of biological resources; 2/

(i) Promote broader international and regional cooperation in furthering scientific and economic understanding of the importance of biodiversity and its functions in ecosystems;

(j) Develop measures and arrangements to implement the rights of countries of origin of genetic resources or countries providing genetic resources, as defined in the Convention on Biological Diversity, particularly developing countries, to benefit from the biotechnological development and the commercial utilization of products derived from such resources. 2/, 3/

Activities

(a) Management-related activities

15.5. Governments at the appropriate levels, consistent with national policies and practices, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental organizations and, with the support of indigenous people and their communities, non-governmental organizations and other groups, including the business and scientific communities, and consistent with the requirements of international law, should, as appropriate:

(a) Develop new or strengthen existing strategies, plans or programmes of action for the conservation of biological diversity and the sustainable use of biological resources, taking account of education and training needs; 4/

(b) Integrate strategies for the conservation of biological diversity and the sustainable use of biological and genetic resources into relevant sectoral or cross-sectoral plans, programmes and policies, with particular reference to the special importance of terrestrial and aquatic biological and genetic resources for food and agriculture; 5/

(c) Undertake country studies or use other methods to identify components of biological diversity important for its conservation and for the sustainable use of biological resources, ascribe values to biological and genetic resources, identify processes and activities with significant impacts upon biological diversity, evaluate the potential economic implications of the conservation of biological diversity and the sustainable use of biological and genetic resources, and suggest priority action;

(d) Take effective economic, social and other appropriate incentive measures to encourage the conservation of biological diversity and the sustainable use of biological resources, including the promotion of sustainable production systems, such as traditional methods of agriculture, agroforestry, forestry, range and wildlife management, which use, maintain or increase biodiversity; 5/

(e) Subject to national legislation, take action to respect, record, protect and promote the wider application of the knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles for the conservation of biological diversity and the sustainable use of biological resources, with a view to the fair and equitable sharing of the benefits arising, and promote mechanisms to involve those communities, including women, in the conservation and management of ecosystems; 1/

(f) Undertake long-term research into the importance of biodiversity for the functioning of ecosystems and the role of ecosystems in producing goods, environmental services and other values supporting sustainable development, with particular reference to the biology and reproductive capacities of key terrestrial and aquatic species, including native, cultivated and cultured species; new observation and inventory techniques; ecological conditions necessary for biodiversity conservation and continued evolution; and social behaviour and nutrition habits dependent on natural ecosystems, where women play key roles. The work should be undertaken with the widest possible participation, especially of indigenous people and their communities, including women; 1/

(g) Take action where necessary for the conservation of biological diversity through the in situ conservation of ecosystems and natural habitats, as well as primitive cultivars and their wild relatives, and the maintenance and recovery of viable populations of species in their natural surroundings, and implement ex situ measures, preferably in the source country. In situ measures should include the reinforcement of terrestrial, marine and aquatic protected area systems and embrace, inter alia, vulnerable freshwater and other wetlands and coastal ecosystems, such as estuaries, coral reefs and mangroves; 6/

(h) Promote the rehabilitation and restoration of damaged ecosystems and the recovery of threatened and endangered species;

(i) Develop policies to encourage the conservation of biodiversity and the sustainable use of biological and genetic resources on private lands;

(j) Promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas;

(k) Introduce appropriate environmental impact assessment procedures for proposed projects likely to have significant impacts upon biological diversity, providing for suitable information to be made widely available and for public participation, where appropriate, and encourage the assessment of the impacts of relevant policies and programmes on biological diversity;

(l) Promote, where appropriate, the establishment and strengthening of national inventory, regulation or management and control systems related to biological resources, at the appropriate level;

(m) Take measures to encourage a greater understanding and appreciation of the value of biological diversity, as manifested both in its component parts and in the ecosystem services provided.

(b) Data and information

15.6. Governments at the appropriate level, consistent with national policies and practices, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental organizations, and with the support of indigenous people and their communities, non-governmental organizations and other groups, including the business and scientific communities, and consistent with the requirements of international law, should, as appropriate: 7/

(a) Regularly collate, evaluate and exchange information on the conservation of biological diversity and the sustainable use of biological resources;

(b) Develop methodologies with a view to undertaking systematic sampling and evaluation on a national basis of the components of biological diversity identified by means of country studies;

(c) Initiate or further develop methodologies and begin or continue work on surveys at the appropriate level on the status of ecosystems and establish baseline information on biological and genetic resources, including those in terrestrial, aquatic, coastal and marine ecosystems, as well as inventories undertaken with the participation of local and indigenous people and their communities;

(d) Identify and evaluate the potential economic and social implications and benefits of the conservation and sustainable use of terrestrial and aquatic species in each country, building upon the results of country studies;

(e) Undertake the updating, analysis and interpretation of data derived from the identification, sampling and evaluation activities described above;

(f) Collect, assess and make available relevant and reliable information in a timely manner and in a form suitable for decision-making at all levels, with the full support and participation of local and indigenous people and their communities.

(c) International and regional cooperation and coordination

15.7. Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental organizations, and, with the support of indigenous people and their communities, non-governmental organizations and other groups, including the business and scientific communities, and consistent with the requirements of international law, should, as appropriate:

(a) Consider the establishment or strengthening of national or international capabilities and networks for the exchange of data and information of relevance to the conservation of biological diversity and the sustainable use of biological and genetic resources; 7/

(b) Produce regularly updated world reports on biodiversity based upon national assessments in all countries;

(c) Promote technical and scientific cooperation in the field of conservation of biological diversity and the sustainable use of biological and genetic resources. Special attention should be given to the development and strengthening of national capabilities by means of human resource development and institution-building, including the transfer of technology and/or development of research and management facilities, such as herbaria, museums, gene banks, and laboratories, related to the conservation of biodiversity; 8/

(d) Without prejudice to the relevant provisions of the Convention on Biological Diversity, facilitate for this chapter the transfer of technologies relevant to the conservation of biological diversity and the sustainable use of biological resources or technologies that make use of genetic resources and cause no significant damage to the environment, in conformity with chapter 34, and recognizing that technology includes biotechnology; 2/, 8/

(e) Promote cooperation between the parties to relevant international conventions and action plans with the aim of strengthening and coordinating efforts to conserve biological diversity and the sustainable use of biological resources;

(f) Strengthen support for international and regional instruments, programmes and action plans concerned with the conservation of biological diversity and the sustainable use of biological resources;

(g) Promote improved international coordination of measures for the effective conservation and management of endangered/non-pest migratory species, including appropriate levels of support for the establishment and management of protected areas in transboundary locations;

(h) Promote national efforts with respect to surveys, data collection, sampling and evaluation, and the maintenance of gene banks.

Means of implementation

(a) Financing and cost evaluation

15.8. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this chapter to be about $3.5 billion, including about $1.75 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

15.9. Specific aspects to be addressed include the need to develop:

(a) Efficient methodologies for baseline surveys and inventories, as well as for the systematic sampling and evaluation of biological resources;

(b) Methods and technologies for the conservation of biological diversity and the sustainable use of biological resources;

(c) Improved and diversified methods for ex situ conservation with a view to the long-term conservation of genetic resources of importance for research and development.

(c) Human resource development

15.10. There is a need, where appropriate, to:

(a) Increase the number and/or make more efficient use of trained personnel in scientific and technological fields relevant to the conservation of biological diversity and the sustainable use of biological resources;

(b) Maintain or establish programmes for scientific and technical education and training of managers and professionals, especially in developing countries, on measures for the identification, conservation of biological diversity and the sustainable use of biological resources;

(c) Promote and encourage understanding of the importance of the measures required for the conservation of biological diversity and the sustainable use of biological resources at all policy-making and decision-making levels in Governments, business enterprises and lending institutions, and promote and encourage the inclusion of these topics in educational programmes.

(d) Capacity-building

15.11. There is a need, where appropriate, to:

(a) Strengthen existing institutions and/or establish new ones responsible for the conservation of biological diversity and to consider the development of mechanisms such as national biodiversity institutes or centres;

(b) Continue to build capacity for the conservation of biological diversity and the sustainable use of biological resources in all relevant sectors;

(c) Build capacity, especially within Governments, business enterprises and bilateral and multilateral development agencies, for integrating biodiversity concerns, potential benefits and opportunity cost calculations into project design, implementation and evaluation processes, as well as for evaluating the impact on biological diversity of proposed development projects;

(d) Enhance the capacity of governmental and private institutions, at the appropriate level, responsible for protected area planning and management to undertake intersectoral coordination and planning with other governmental institutions, non-governmental organizations and, where appropriate, indigenous people and their communities.

Notes

1/ See chapter 26 (Recognizing and strengthening the role of indigenous people and their communities) and chapter 24 (Global action for women towards sustainable and equitable development).

2/ See chapter 16 (Environmentally sound management of biotechnology).

3/ Article 2 (Use of terms) of the Convention on Biological Diversity includes the following definitions:

"Country of origin of genetic resources" means the country which possesses those genetic resources in in-situ conditions.

"Country providing genetic resources" means the country supplying genetic resources collected from in-situ sources, including populations of both wild and domesticated species, or taken from ex-situ sources, which may or may not have originated in that country.

4/ See chapter 36 (Promoting education, public awareness and training).

5/ See chapter 14 (Promoting sustainable agriculture and rural development) and chapter 11 (Combating deforestation).

6/ See chapter 17 (Protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources).

7/ See chapter 40 (Information for decision-making).

8/ See chapter 34 (Transfer of environmentally sound technology, cooperation and capacity-building).

Chapter 16

ENVIRONMENTALLY SOUND MANAGEMENT OF BIOTECHNOLOGY

INTRODUCTION

16.1. Biotechnology is the integration of the new techniques emerging from modern biotechnology with the well-established approaches of traditional biotechnology. Biotechnology, an emerging knowledge-intensive field, is a set of enabling techniques for bringing about specific man-made changes in deoxyribonucleic acid (DNA), or genetic material, in plants, animals and microbial systems, leading to useful products and technologies. By itself, biotechnology cannot resolve all the fundamental problems of environment and development, so expectations need to be tempered by realism. Nevertheless, it promises to make a significant contribution in enabling the development of, for example, better health care, enhanced food security through sustainable agricultural practices, improved supplies of potable water, more efficient industrial development processes for transforming raw materials, support for sustainable methods of afforestation and reforestation, and detoxification of hazardous wastes. Biotechnology also offers new opportunities for global partnerships, especially between the countries rich in biological resources (which include genetic resources) but lacking the expertise and investments needed to apply such resources through biotechnology and the countries that have developed the technological expertise to transform biological resources so that they serve the needs of sustainable development. 1/ Biotechnology can assist in the conservation of those resources through, for example, *ex situ* techniques. The programme areas set out below seek to foster internationally agreed principles to be applied to ensure the environmentally sound management of biotechnology, to engender public trust and confidence, to promote the development of sustainable applications of biotechnology and to establish appropriate enabling mechanisms, especially within developing countries, through the following activities:

(a) Increasing the availability of food, feed and renewable raw materials;

(b) Improving human health;

(c) Enhancing protection of the environment;

(d) Enhancing safety and developing international mechanisms for cooperation;

(e) Establishing enabling mechanisms for the development and the environmentally sound application of biotechnology.

PROGRAMME AREAS

A. Increasing the availability of food, feed and renewable raw materials

Basis for action

16.2. To meet the growing consumption needs of the global population, the challenge is not only to increase food supply, but also to improve food distribution significantly while simultaneously developing more sustainable agricultural systems. Much of this increased productivity will need to take place in developing countries. It will require the successful and environmentally safe application of biotechnology in agriculture, in the environment and in human health care. Most of the investment in modern biotechnology has been in the industrialized world. Significant new investments and human resource development will be required in biotechnology, especially in the developing world.

Objectives

16.3. The following objectives are proposed, keeping in mind the need to promote the use of appropriate safety measures based on programme area D:

(a) To increase to the optimum possible extent the yield of major crops, livestock, and aquaculture species, by using the combined resources of modern biotechnology and conventional plant/animal/micro-organism improvement, including the more diverse use of genetic material resources, both hybrid and original. 2/ Forest product yields should similarly be increased, to ensure the sustainable use of forests; 3/

(b) To reduce the need for volume increases of food, feed and raw materials by improving the nutritional value (composition) of the source crops, animals and micro-organisms, and to reduce post-harvest losses of plant and animal products;

(c) To increase the use of integrated pest, disease and crop management techniques to eliminate overdependence on agrochemicals, thereby encouraging environmentally sustainable agricultural practices;

(d) To evaluate the agricultural potential of marginal lands in comparison with other potential uses and to develop, where appropriate, systems allowing for sustainable productivity increases;

(e) To expand the applications of biotechnology in forestry, both for increasing yields and more efficient utilization of forest products and for improving afforestation and reforestation techniques. Efforts should be concentrated on species and products that are grown in and are of value particularly for developing countries;

(f) To increase the efficiency of nitrogen fixation and mineral absorption by the symbiosis of higher plants with micro-organisms;

(g) To improve capabilities in basic and applied sciences and in the management of complex interdisciplinary research projects.

Activities

(a) Management-related activities

16.4. Governments at the appropriate level, with the assistance of international and regional organizations and with the support of non-governmental organizations, the private sector and academic and scientific institutions, should improve both plant and animal breeding and micro-organisms through the use of traditional and modern biotechnologies, to enhance sustainable agricultural output to achieve food security, particularly in developing countries, with due regard to the prior identification of desired characteristics before modification, taking into account the needs of farmers, the socio-economic, cultural and environmental impacts of modifications and the need to promote sustainable social and economic development, paying particular attention to how the use of biotechnology will impact on the maintenance of environmental integrity.

16.5. More specifically, these entities should:

(a) Improve productivity, nutritional quality and shelf-life of food and animal feed products, with efforts including work on pre- and post-harvest losses;

(b) Further develop resistance to diseases and pests;

(c) Develop plant cultivars tolerant and/or resistant to stress from factors such as pests and diseases and from abiotic causes;

(d) Promote the use of underutilized crops of possible future importance for human nutrition and industrial supply of raw materials;

(e) Increase the efficiency of symbiotic processes that assist sustainable agricultural production;

(f) Facilitate the conservation and safe exchange of plant, animal and microbial germ plasm by applying risk assessment and management procedures, including improved diagnostic techniques for detection of pests and diseases by better methods of rapid propagation;

(g) Develop improved diagnostic techniques and vaccines for the prevention and spread of diseases and for rapid assessment of toxins or infectious organisms in products for human use or livestock feed;

(h) Identify more productive strains of fast-growing trees, especially for fuel wood, and develop rapid propagation methods to aid their wider dissemination and use;

(i) Evaluate the use of various biotechnology techniques to improve the yields of fish, algal and other aquatic species;

(j) Promote sustainable agricultural output by strengthening and broadening the capacity and scope of existing research centres to achieve the necessary critical mass through encouragement and monitoring of research into the development of biological products and processes of productive and environmental value that are economically and socially feasible, while taking safety considerations into account;

(k) Promote the integration of appropriate and traditional biotechnologies for the purposes of cultivating genetically modified plants, rearing healthy animals and protecting forest genetic resources;

(l) Develop processes to increase the availability of materials derived from biotechnology for use in food, feed and renewable raw materials production.

(b) Data and information

16.6. The following activities should be undertaken:

(a) Consideration of comparative assessments of the potential of the different technologies for food production, together with a system for assessing the possible effects of biotechnologies on international trade in agricultural products;

(b) Examination of the implications of the withdrawal of subsidies and the possible use of other economic instruments to reflect the environmental costs associated with the unsustainable use of agrochemicals;

(c) Maintenance and development of data banks of information on environmental and health impacts of organisms to facilitate risk assessment;

(d) Acceleration of technology acquisition, transfer and adaptation by developing countries to support national activities that promote food security.

(c) International and regional cooperation and coordination

16.7. Governments at the appropriate level, with the support of relevant international and regional organizations, should promote the following activities in conformity with international agreements or arrangements on biological diversity, as appropriate:

(a) Cooperation on issues related to conservation of, access to and exchange of germ plasm; rights associated with intellectual property and informal innovations, including farmers' and breeders' rights; access to the benefits of biotechnology; and bio-safety;

(b) Promotion of collaborative research programmes, especially in developing countries, to support activities outlined in this programme area, with particular reference to cooperation with local and indigenous people and their communities in the conservation of biological diversity and sustainable use of biological resources, as well as the fostering of traditional methods and knowledge of such groups in connection with these activities;

(c) Acceleration of technology acquisition, transfer and adaptation by developing countries to support national activities that promote food security, through the development of systems for substantial and sustainable productivity increases that do not damage or endanger local ecosystems; 4/

(d) Development of appropriate safety procedures based on programme area D, taking account of ethical considerations.

Means of implementation

(a) Financing and cost evaluation

16.8. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $5 billion, including about $50 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means*

(c) Human resource development

16.9. Training of competent professionals in the basic and applied sciences at all levels (including scientific personnel, technical staff and extension workers) is one of the most essential components of any programme of this kind. Creating awareness of the benefits and risks of biotechnology is essential. Given the importance of good management of research resources for the successful completion of large multidisciplinary projects, continuing programmes of formal training for scientists should include managerial training. Training programmes should also be developed, within the context of specific projects, to meet regional or national needs for comprehensively trained personnel capable of using advanced technology to reduce the "brain drain" from developing to developed countries. Emphasis should be given to encouraging collaboration between and training of scientists, extension workers and users to produce integrated systems. Additionally, special consideration should be given to the execution of programmes for training and exchange of knowledge on traditional biotechnologies and for training on safety procedures.

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* See paras. 16.6 and 16.7.

(d) Capacity-building

16.10. Institutional upgrading or other appropriate measures will be needed to build up technical, managerial, planning and administrative capacities at the national level to support the activities in this programme area. Such measures should be backed up by international, scientific, technical and financial assistance adequate to facilitate technical cooperation and raise the capacities of the developing countries. Programme area E contains further details.

B. Improving human health

Basis for action

16.11. The improvement of human health is one of the most important objectives of development. The deterioration of environmental quality, notably air, water and soil pollution owing to toxic chemicals, hazardous wastes, radiation and other sources, is a matter of growing concern. This degradation of the environment resulting from inadequate or inappropriate development has a direct negative effect on human health. Malnutrition, poverty, poor human settlements, lack of good-quality potable water and inadequate sanitation facilities add to the problems of communicable and non-communicable diseases. As a consequence, the health and well-being of people are exposed to increasing pressures.

Objectives

16.12. The main objective of this programme area is to contribute, through the environmentally sound application of biotechnology to an overall health programme, to: 5/

(a) Reinforce or inaugurate (as a matter of urgency) programmes to help combat major communicable diseases;

(b) Promote good general health among people of all ages;

(c) Develop and improve programmes to assist in specific treatment of and protection from major non-communicable diseases;

(d) Develop and strengthen appropriate safety procedures based on programme area D, taking account of ethical considerations;

(e) Create enhanced capabilities for carrying out basic and applied research and for managing interdisciplinary research.

Activities

(a) Management-related activities

16.13. Governments at the appropriate level, with the assistance of international and regional organizations, academic and scientific institutions, and the pharmaceutical industry, should, taking into account appropriate safety and ethical considerations:

(a) Develop national and international programmes for identifying and targeting those populations of the world most in need of improvement in general health and protection from diseases;

(b) Develop criteria for evaluating the effectiveness and the benefits and risks of the proposed activities;

(c) Establish and enforce screening, systematic sampling and evaluation procedures for drugs and medical technologies, with a view to barring the use of those that are unsafe for the purposes of experimentation; ensure that drugs and technologies relating to reproductive health are safe and effective and take account of ethical considerations;

(d) Improve, systematically sample and evaluate drinking-water quality by introducing appropriate specific measures, including diagnosis of water-borne pathogens and pollutants;

(e) Develop and make widely available new and improved vaccines against major communicable diseases that are efficient and safe and offer protection with a minimum number of doses, including intensifying efforts directed at the vaccines needed to combat common diseases of children;

(f) Develop biodegradable delivery systems for vaccines that eliminate the need for present multiple-dose schedules, facilitate better coverage of the population and reduce the costs of immunization;

(g) Develop effective biological control agents against disease-transmitting vectors, such as mosquitoes and resistant variants, taking account of environmental protection considerations;

(h) Using the tools provided by modern biotechnology, develop, inter alia, improved diagnostics, new drugs and improved treatments and delivery systems;

(i) Develop the improvement and more effective utilization of medicinal plants and other related sources;

(j) Develop processes to increase the availability of materials derived from biotechnology, for use in improving human health.

(b) Data and information

16.14. The following activities should be undertaken:

(a) Research to assess the comparative social, environmental and financial costs and benefits of different technologies for basic and reproductive health care within a framework of universal safety and ethical considerations;

(b) Development of public education programmes directed at decision makers and the general public to encourage awareness and understanding of the relative benefits and risks of modern biotechnology, according to ethical and cultural considerations.

(c) International and regional cooperation and coordination

16.15. Governments at the appropriate levels, with the support of relevant international and regional organizations, should:

(a) Develop and strengthen appropriate safety procedures based on programme area D, taking account of ethical considerations;

(b) Support the development of national programmes, particularly in developing countries, for improvements in general health, especially protection from major communicable diseases, common diseases of children and disease-transmitting factors.

Means of implementation

16.16. To achieve the above goals, the activities need to be implemented with urgency if progress towards the control of major communicable diseases is to be achieved by the beginning of the next century. The spread of some diseases to all regions of the world calls for global measures. For more localized diseases, regional or national policies will be more appropriate. The achievement of goals calls for:

(a) Continuous international commitment;

(b) National priorities with a defined time-frame;

(c) Scientific and financial input at global and national levels.

(a) Financing and cost evaluation

16.17. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $14 billion, including about $130 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, _inter alia_, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

16.18. Well-coordinated multidisciplinary efforts involving cooperation between scientists, financial institutions and industries will be required. At the global level, this may mean collaboration between research institutions in different countries, with funding at the intergovernmental level, possibly supported by similar collaboration at the national level. Research and development support will also need to be strengthened, together with the mechanisms for providing the transfer of relevant technology.

(c) Human resource development

16.19. Training and technology transfer is needed at the global level, with regions and countries having access to, and participation in exchange of, information and expertise, particularly indigenous or traditional knowledge and related biotechnology. It is essential to create or enhance endogenous capabilities in developing countries to enable them to participate actively in the processes of biotechnology production. The training of personnel could be undertaken at three levels:

(a) That of scientists required for basic and product-oriented research;

(b) That of health personnel (to be trained in the safe use of new products) and of science managers required for complex intermultidisciplinary research;

(c) That of tertiary-level technical workers required for delivery in the field.

(d) Capacity-building*

C. Enhancing protection of the environment

Basis for action

16.20. Environmental protection is an integral component of sustainable development. The environment is threatened in all its biotic and abiotic components: animals, plants, microbes and ecosystems comprising biological diversity; water, soil and air, which form the physical components of habitats and ecosystems; and all the interactions between the components of biodiversity and their sustaining habitats and ecosystems. With the continued increase in the use of chemicals, energy and non-renewable resources by an expanding global population, associated environmental problems will also increase. Despite increasing efforts to prevent waste accumulation and to promote recycling, the amount of environmental damage caused by overconsumption, the quantities of waste generated and the degree of unsustainable land use appear likely to continue growing.

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* See programme area E.

16.21. The need for a diverse genetic pool of plant, animal and microbial germ plasm for sustainable development is well established. Biotechnology is one of many tools that can play an important role in supporting the rehabilitation of degraded ecosystems and landscapes. This may be done through the development of new techniques for reforestation and afforestation, germ plasm conservation, and cultivation of new plant varieties. Biotechnology can also contribute to the study of the effects exerted on the remaining organisms and on other organisms by organisms introduced into ecosystems.

Objectives

16.22. The aim of this programme is to prevent, halt and reverse environmental degradation through the appropriate use of biotechnology in conjunction with other technologies, while supporting safety procedures as an integral component of the programme. Specific objectives include the inauguration as soon as possible of specific programmes with specific targets:

(a) To adopt production processes making optimal use of natural resources, by recycling biomass, recovering energy and minimizing waste generation; 6/

(b) To promote the use of biotechnologies, with emphasis on bio-remediation of land and water, waste treatment, soil conservation, reforestation, afforestation and land rehabilitation; 7/, 8/

(c) To apply biotechnologies and their products to protect environmental integrity with a view to long-term ecological security.

Activities

(a) Management-related activities

16.23. Governments at the appropriate level, with the support of relevant international and regional organizations, the private sector, non-governmental organizations and academic and scientific institutions, should:

(a) Develop environmentally sound alternatives and improvements for environmentally damaging production processes;

(b) Develop applications to minimize the requirement for unsustainable synthetic chemical input and to maximize the use of environmentally appropriate products, including natural products (see programme area A);

(c) Develop processes to reduce waste generation, treat waste before disposal and make use of biodegradable materials;

(d) Develop processes to recover energy and provide renewable energy sources, animal feed and raw materials from recycling organic waste and biomass;

(e) Develop processes to remove pollutants from the environment, including accidental oil spills, where conventional techniques are not available or are expensive, inefficient or inadequate;

(f) Develop processes to increase the availability of planting materials, particularly indigenous varieties, for use in afforestation and reforestation and to improve sustainable yields from forests;

(g) Develop applications to increase the availability of stress-tolerant planting material for land rehabilitation and soil conservation;

(h) Promote the use of integrated pest management based on the judicious use of bio-control agents;

(i) Promote the appropriate use of bio-fertilizers within national fertilizer programmes;

(j) Promote the use of biotechnologies relevant to the conservation and scientific study of biological diversity and the sustainable use of biological resources;

(k) Develop easily applicable technologies for the treatment of sewage and organic waste;

(l) Develop new technologies for rapid screening of organisms for useful biological properties;

(m) Promote new biotechnologies for tapping mineral resources in an environmentally sustainable manner.

(b) Data and information

16.24. Steps should be taken to increase access both to existing information about biotechnology and to facilities based on global databases.

(c) International and regional cooperation and coordination

16.25. Governments at the appropriate level, with the support of relevant international and regional organizations, should:

(a) Strengthen research, training and development capabilities, particularly in developing countries, to support the activities outlined in this programme area;

(b) Develop mechanisms for scaling up and disseminating environmentally sound biotechnologies of high environmental importance, especially in the short term, even though those biotechnologies may have limited commercial potential;

(c) Enhance cooperation, including transfer of biotechnology, between participating countries for capacity-building;

(d) Develop appropriate safety procedures based on programme area D, taking account of ethical considerations.

Means of implementation

(a) Financing and cost evaluation

16.26. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1 billion, including about $10 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, _inter alia_, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means*

(c) Human resource development

16.27. The activities for this programme area will increase the demand for trained personnel. Support for existing training programmes needs to be increased, for example, at the university and technical institute level, as well as the exchange of trained personnel between countries and regions. New and additional training programmes also need to be developed, for example, for technical and support personnel. There is also an urgent need to improve the level of understanding of biological principles and their policy implications among decision makers in Governments, and financial and other institutions.

(d) Capacity-building

16.28. Relevant institutions will need to have the responsibility for undertaking, and the capacity (political, financial and workforce) to undertake, the above-mentioned activities and to be dynamic in response to new biotechnological developments (see programme area E).

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* See paras. 16.23-16.25 above.

D. Enhancing safety and developing international mechanisms for cooperation

Basis for action

16.29. There is a need for further development of internationally agreed principles on risk assessment and management of all aspects of biotechnology, which should build upon those developed at the national level. Only when adequate and transparent safety and border-control procedures are in place will the community at large be able to derive maximum benefit from, and be in a much better position to accept the potential benefits and risks of, biotechnology. Several fundamental principles could underlie many of these safety procedures, including primary consideration of the organism, building on the principle of familiarity, applied in a flexible framework, taking into account national requirements and recognizing that the logical progression is to start with a step-by-step and case-by-case approach, but also recognizing that experience has shown that in many instances a more comprehensive approach should be used, based on the experiences of the first period, leading, *inter alia*, to streamlining and categorizing; complementary consideration of risk assessment and risk management; and classification into contained use or release to the environment.

Objectives

16.30. The aim of this programme area is to ensure safety in biotechnology development, application, exchange and transfer through international agreement on principles to be applied on risk assessment and management,* with particular reference to health and environmental considerations, including the widest possible public participation and taking account of ethical considerations.

Activities

16.31. The proposed activities for this programme area call for close international cooperation. They should build upon planned or existing activities to accelerate the environmentally sound application of biotechnology, especially in developing countries.*

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* See research paper No. 55, entited "Environmentally sound management of biotechnology: safety in biotechnology - assessment and management of risk" (February 1992), prepared by the United Nations Conference on Environment and Development secretariat to take account of comments made at the third session of the Preparatory Committee for the United Nations Conference on Environment and Development on part II of document A/CONF.151/PC/67, which incorporated the findings of the ad hoc workshop of Senior-level Experts on Assessing and Managing Biotechnology Risks, held in London in June 1991.

(a) Management-related activities

16.32. Governments at the appropriate level, with the support of relevant international and regional organizations, the private sector, non-governmental organizations and academic and scientific institutions, should:

(a) Make the existing safety procedures widely available by collecting the existing information and adapting it to the specific needs of different countries and regions;

(b) Further develop, as necessary, the existing safety procedures to promote scientific development and categorization in the areas of risk assessment and risk management (information requirements; databases; procedures for assessing risks and conditions of release; establishment of safety conditions; monitoring and inspections, taking account of ongoing national, regional and international initiatives and avoiding duplication wherever possible);

(c) Compile, update and develop compatible safety procedures into a framework of internationally agreed principles as a basis for guidelines to be applied on safety in biotechnology, including consideration of the need for and feasibility of an international agreement, and promote information exchange as a basis for further development, drawing on the work already undertaken by international or other expert bodies;

(d) Undertake training programmes at the national and regional levels on the application of the proposed technical guidelines;

(e) Assist in exchanging information about the procedures required for safe handling and risk management and about the conditions of release of the products of biotechnology, and cooperate in providing immediate assistance in cases of emergencies that may arise in conjunction with the use of biotechnology products.

(b) Data and information*

(c) International and regional cooperation and coordination

16.33. Governments at the appropriate level, with the support of the relevant international and regional organizations, should raise awareness of the relative benefits and risks of biotechnology.

16.34. Further activities should include the following (see also para. 16.32):

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* See paras. 16.32 and 16.33.

(a) Organizing one or more regional meetings between countries to identify further practical steps to facilitate international cooperation in bio-safety;

(b) Establishing an international network incorporating national, regional and global contact points;

(c) Providing direct assistance upon request through the international network, using information networks, databases and information procedures;

(d) Considering the need for and feasibility of internationally agreed guidelines on safety in biotechnology releases, including risk assessment and risk management, and considering studying the feasibility of guidelines which could facilitate national legislation on liability and compensation.

Means of implementation

(a) Financing and cost evaluation

16.35. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programmes to be about $2 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means*

(c) Human resource development*

(d) Capacity-building

16.36. Adequate international technical and financial assistance should be provided and technical cooperation to developing countries facilitated in order to build up technical, managerial, planning and administrative capacities at the national level to support the activities in this programme area (see also programme area E).

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* See para. 16.32.

E. Establishing enabling mechanisms for the development and the environmentally sound application of biotechnology

Basis for action

16.37. The accelerated development and application of biotechnologies, particularly in developing countries, will require a major effort to build up institutional capacities at the national and regional levels. In developing countries, enabling factors such as training capacity, know-how, research and development facilities and funds, industrial building capacity, capital (including venture capital) protection of intellectual property rights, and expertise in areas including marketing research, technology assessment, socio-economic assessment and safety assessment are frequently inadequate. Efforts will therefore need to be made to build up capacities in these and other areas and to match such efforts with appropriate levels of financial support. There is therefore a need to strengthen the endogenous capacities of developing countries by means of new international initiatives to support research in order to speed up the development and application of both new and conventional biotechnologies to serve the needs of sustainable development at the local, national and regional levels. National mechanisms to allow for informed comment by the public with regard to biotechnology research and application should be part of the process.

16.38. Some activities at the national, regional and global levels already address the issues outlined in programme areas A, B, C and D, as well as the provision of advice to individual countries on the development of national guidelines and systems for the implementation of those guidelines. These activities are generally uncoordinated, however, involving many different organizations, priorities, constituencies, time-scales, funding sources and resource constraints. There is a need for a much more cohesive and coordinated approach to harness available resources in the most effective manner. As with most new technologies, research in biotechnology and the application of its findings could have significant positive and negative socio-economic as well as cultural impacts. These impacts should be carefully identified in the earliest phases of the development of biotechnology in order to enable appropriate management of the consequences of transferring biotechnology.

Objectives

16.39. The objectives are as follows:

(a) To promote the development and application of biotechnologies, with special emphasis on developing countries, by:

(i) Enhancing existing efforts at the national, regional and global levels;

(ii) Providing the necessary support for biotechnology, particularly research and product development, at the national, regional and international levels;

(iii) Raising public awareness regarding the relative beneficial aspects of and risks related to biotechnology, to contribute to sustainable development;

(iv) Helping to create a favourable climate for investments, industrial capacity-building and distribution/marketing;

(v) Encouraging the exchange of scientists among all countries and discouraging the "brain drain";

(vi) Recognizing and fostering the traditional methods and knowledge of indigenous peoples and their communities and ensuring the opportunity for their participation in the economic and commercial benefits arising from developments in biotechnology; 9/

(b) To identify ways and means of enhancing current efforts, building wherever possible on existing enabling mechanisms, particularly regional, to determine the precise nature of the needs for additional initiatives, particularly in respect of developing countries, and to develop appropriate response strategies, including proposals for any new international mechanisms;

(c) To establish or adapt appropriate mechanisms for safety appraisal and risk assessment at the local, regional and international levels, as appropriate.

Activities

(a) Management-related activities

16.40. Governments at the appropriate level, with the support of international and regional organizations, the private sector, non-governmental organizations and academic and scientific institutions, should:

(a) Develop policies and mobilize additional resources to facilitate greater access to the new biotechnologies, particularly by and among developing countries;

(b) Implement programmes to create greater awareness of the potential and relative benefits and risks of the environmentally sound application of biotechnology among the public and key decision makers;

(c) Undertake an urgent review of existing enabling mechanisms, programmes and activities at the national, regional and global levels to identify strengths, weaknesses and gaps, and to assess the priority needs of developing countries;

(d) Undertake an urgent follow-up and critical review to identify ways and means of strengthening endogenous capacities within and among developing countries for the environmentally sound application of biotechnology, including, as a first step, ways to improve existing mechanisms, particularly at the regional level, and, as a subsequent step, the consideration of possible new international mechanisms, such as regional biotechnology centres;

(e) Develop strategic plans for overcoming targeted constraints by means of appropriate research, product development and marketing;

(f) Establish additional quality-assurance standards for biotechnology applications and products, where necessary.

(b) Data and information

16.41. The following activities should be undertaken: facilitation of access to existing information dissemination systems, especially among developing countries; improvement of such access where appropriate; and consideration of the development of a directory of information.

(c) International and regional cooperation and coordination

16.42. Governments at the appropriate level, with the assistance of international and regional organizations, should develop appropriate new initiatives to identify priority areas for research based on specific problems and facilitate access to new biotechnologies, particularly by and among developing countries, among relevant undertakings within those countries, in order to strengthen endogenous capacities and to support the building of research and institutional capacity in those countries.

Means of implementation

(a) Financing and cost evaluation

16.43. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $5 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

16.44. Workshops, symposia, seminars and other exchanges among the scientific community at the regional and global levels, on specific priority themes, will need to be organized, making full use of the existing scientific and technological manpower in each country for bringing about such exchanges.

(c) Human resource development

16.45. Personnel development needs will need to be identified and additional training programmes developed at the national, regional and global levels, especially in developing countries. These should be supported by increased training at all levels, graduate, postgraduate and post-doctoral, as well as by the training of technicians and support staff, with particular reference to the generation of trained manpower in consultant services, design, engineering and marketing research. Training programmes for lecturers training scientists and technologists in advanced research institutions in different countries throughout the world will also need to be developed, and systems giving appropriate rewards, incentives and recognition to scientists and technologists will need to be instituted (see para. 16.44). Conditions of service will also need to be improved at the national level in developing countries to encourage and nurture trained manpower with a view to retaining that manpower locally. Society should be informed of the social and cultural impact of the development and application of biotechnology.

(d) Capacity-building

16.46. Biotechnology research and development is undertaken both under highly sophisticated conditions and at the practical level in many countries. Efforts will be needed to ensure that the necessary infrastructure facilities for research, extension and technology activities are available on a decentralized basis. Global and regional collaboration for basic and applied research and development will also need to be further enhanced and every effort should be made to ensure that existing national and regional facilities are fully utilized. Such institutions already exist in some countries and it should be possible to make use of them for training purposes and joint research projects. Strengthening of universities, technical schools and local research institutions for the development of biotechnologies and extension services for their application will need to be developed, especially in developing countries.

Notes

1/ See chapter 15 (Conservation of biological diversity).

2/ See chapter 14 (Promoting sustainable agriculture and rural development).

3/ See chapter 11 (Combating deforestation).

4/ See chapter 34 (Transfer of environmentally sound technology, cooperation and capacity-building).

5/ See chapter 6 (Protecting and promoting human health conditions).

6/ See chapter 21 (Environmentally sound management of solid wastes and sewage-related issues).

7/ See chapter 10 (Integrated approach to the planning and management of land resources).

Notes (continued)

8/ See chapter 18 (Protection of the quality and supply of freshwater resources: application of integrated approaches to the development, management and use of water resources).

9/ See chapter 26 (Recognizing and strengthening the role of indigenous people and their communities).

Chapter 17

PROTECTION OF THE OCEANS, ALL KINDS OF SEAS, INCLUDING ENCLOSED AND SEMI-ENCLOSED SEAS, AND COASTAL AREAS AND THE PROTECTION, RATIONAL USE AND DEVELOPMENT OF THEIR LIVING RESOURCES

INTRODUCTION

17.1. The marine environment - including the oceans and all seas and adjacent coastal areas - forms an integrated whole that is an essential component of the global life-support system and a positive asset that presents opportunities for sustainable development. International law, as reflected in the provisions of the United Nations Convention on the Law of the Sea 1/, 2/ referred to in this chapter of Agenda 21, sets forth rights and obligations of States and provides the international basis upon which to pursue the protection and sustainable development of the marine and coastal environment and its resources. This requires new approaches to marine and coastal area management and development at the national, subregional, regional and global levels, approaches that are integrated in content and are precautionary and anticipatory in ambit, as reflected in the following programme areas: 3/

(a) Integrated management and sustainable development of coastal areas, including exclusive economic zones;

(b) Marine environmental protection;

(c) Sustainable use and conservation of marine living resources of the high seas;

(d) Sustainable use and conservation of marine living resources under national jurisdiction;

(e) Addressing critical uncertainties for the management of the marine environment and climate change;

(f) Strengthening international, including regional, cooperation and coordination;

(g) Sustainable development of small islands.

17.2. The implementation by developing countries of the activities set forth below shall be commensurate with their individual technological and financial capacities and priorities in allocating resources for development needs and ultimately depends on the technology transfer and financial resources required and made available to them.

PROGRAMME AREAS

A. Integrated management and sustainable development of coastal and marine areas, including exclusive economic zones

Basis for action

17.3. The coastal area contains diverse and productive habitats important for human settlements, development and local subsistence. More than half the world's population lives within 60 km of the shoreline, and this could rise to three quarters by the year 2020. Many of the world's poor are crowded in coastal areas. Coastal resources are vital for many local communities and indigenous people. The exclusive economic zone (EEZ) is also an important marine area where the States manage the development and conservation of natural resources for the benefit of their people. For small island States or countries, these are the areas most available for development activities.

17.4. Despite national, subregional, regional and global efforts, current approaches to the management of marine and coastal resources have not always proved capable of achieving sustainable development, and coastal resources and the coastal environment are being rapidly degraded and eroded in many parts of the world.

Objectives

17.5. Coastal States commit themselves to integrated management and sustainable development of coastal areas and the marine environment under their national jurisdiction. To this end, it is necessary to, inter alia:

(a) Provide for an integrated policy and decision-making process, including all involved sectors, to promote compatibility and a balance of uses;

(b) Identify existing and projected uses of coastal areas and their interactions;

(c) Concentrate on well-defined issues concerning coastal management;

(d) Apply preventive and precautionary approaches in project planning and implementation, including prior assessment and systematic observation of the impacts of major projects;

(e) Promote the development and application of methods, such as national resource and environmental accounting, that reflect changes in value resulting from uses of coastal and marine areas, including pollution, marine erosion, loss of resources and habitat destruction;

(f) Provide access, as far as possible, for concerned individuals, groups and organizations to relevant information and opportunities for consultation and participation in planning and decision-making at appropriate levels.

Activities

(a) Management-related activities

17.6. Each coastal State should consider establishing, or where necessary strengthening, appropriate coordinating mechanisms (such as a high-level policy planning body) for integrated management and sustainable development of coastal and marine areas and their resources, at both the local and national levels. Such mechanisms should include consultation, as appropriate, with the academic and private sectors, non-governmental organizations, local communities, resource user groups, and indigenous people. Such national coordinating mechanisms could provide, inter alia, for:

(a) Preparation and implementation of land and water use and siting policies;

(b) Implementation of integrated coastal and marine management and sustainable development plans and programmes at appropriate levels;

(c) Preparation of coastal profiles identifying critical areas, including eroded zones, physical processes, development patterns, user conflicts and specific priorities for management;

(d) Prior environmental impact assessment, systematic observation and follow-up of major projects, including the systematic incorporation of results in decision-making;

(e) Contingency plans for human induced and natural disasters, including likely effects of potential climate change and sealevel rise, as well as contingency plans for degradation and pollution of anthropogenic origin, including spills of oil and other materials;

(f) Improvement of coastal human settlements, especially in housing, drinking water and treatment and disposal of sewage, solid wastes and industrial effluents;

(g) Periodic assessment of the impacts of external factors and phenomena to ensure that the objectives of integrated management and sustainable development of coastal areas and the marine environment are met;

(h) Conservation and restoration of altered critical habitats;

(i) Integration of sectoral programmes on sustainable development for settlements, agriculture, tourism, fishing, ports and industries affecting the coastal area;

(j) Infrastructure adaptation and alternative employment;

(k) Human resource development and training;

(l) Public education, awareness and information programmes;

(m) Promoting environmentally sound technology and sustainable practices;

(n) Development and simultaneous implementation of environmental quality criteria.

17.7. Coastal States, with the support of international organizations, upon request, should undertake measures to maintain biological diversity and productivity of marine species and habitats under national jurisdiction. *Inter alia*, these measures might include: surveys of marine biodiversity, inventories of endangered species and critical coastal and marine habitats; establishment and management of protected areas; and support of scientific research and dissemination of its results.

(b) *Data and information*

17.8. Coastal States, where necessary, should improve their capacity to collect, analyse, assess and use information for sustainable use of resources, including environmental impacts of activities affecting the coastal and marine areas. Information for management purposes should receive priority support in view of the intensity and magnitude of the changes occurring in the coastal and marine areas. To this end, it is necessary to, *inter alia*:

(a) Develop and maintain databases for assessment and management of coastal areas and all seas and their resources;

(b) Develop socio-economic and environmental indicators;

(c) Conduct regular environmental assessment of the state of the environment of coastal and marine areas;

(d) Prepare and maintain profiles of coastal area resources, activities, uses, habitats and protected areas based on the criteria of sustainable development;

(e) Exchange information and data.

17.9. Cooperation with developing countries, and, where applicable, subregional and regional mechanisms, should be strengthened to improve their capacities to achieve the above.

(c) *International and regional cooperation and coordination*

17.10. The role of international cooperation and coordination on a bilateral basis and, where applicable, within a subregional, interregional, regional or global framework, is to support and supplement national efforts of coastal States to promote integrated management and sustainable development of coastal and marine areas.

17.11. States should cooperate, as appropriate, in the preparation of national guidelines for integrated coastal zone management and development, drawing on existing experience. A global conference to exchange experience in the field could be held before 1994.

Means of implementation

(a) Financing and cost evaluation

17.12. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $6 billion, including about $50 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

17.13. States should cooperate in the development of necessary coastal systematic observation, research and information management systems. They should provide access to and transfer environmentally safe technologies and methodologies for sustainable development of coastal and marine areas to developing countries. They should also develop technologies and endogenous scientific and technological capacities.

17.14. International organizations, whether subregional, regional or global, as appropriate, should support coastal States, upon request, in these efforts, as indicated above, devoting special attention to developing countries.

(c) Human resource development

17.15. Coastal States should promote and facilitate the organization of education and training in integrated coastal and marine management and sustainable development for scientists, technologists, managers (including community-based managers) and users, leaders, indigenous peoples, fisherfolk, women and youth, among others. Management and development, as well as environmental protection concerns and local planning issues, should be incorporated in educational curricula and public awareness campaigns, with due regard to traditional ecological knowledge and socio-cultural values.

17.16. International organizations, whether subregional, regional or global, as appropriate, should support coastal States, upon request, in the areas indicated above, devoting special attention to developing countries.

(d) Capacity-building

17.17. Full cooperation should be extended, upon request, to coastal States in their capacity-building efforts and, where appropriate, capacity-building should be included in bilateral and multilateral development cooperation. Coastal States may consider, *inter alia*:

(a) Ensuring capacity-building at the local level;

(b) Consulting on coastal and marine issues with local administrations, the business community, the academic sector, resource user groups and the general public;

(c) Coordinating sectoral programmes while building capacity;

(d) Identifying existing and potential capabilities, facilities and needs for human resource development and scientific and technological infrastructure;

(e) Developing scientific and technological means and research;

(f) Promoting and facilitating human resource development and education;

(g) Supporting "centres of excellence" in integrated coastal and marine resource management;

(h) Supporting pilot demonstration programmes and projects in integrated coastal and marine management.

B. Marine environmental protection

Basis for action

17.18. Degradation of the marine environment can result from a wide range of sources. Land-based sources contribute 70 per cent of marine pollution, while maritime transport and dumping-at-sea activities contribute 10 per cent each. The contaminants that pose the greatest threat to the marine environment are, in variable order of importance and depending on differing national or regional situations, sewage, nutrients, synthetic organic compounds, sediments, litter and plastics, metals, radionuclides, oil/hydrocarbons and polycyclic aromatic hydrocarbons (PAHs). Many of the polluting substances originating from land-based sources are of particular concern to the marine environment since they exhibit at the same time toxicity, persistence and bioaccumulation in the food chain. There is currently no global scheme to address marine pollution from land-based sources.

17.19. Degradation of the marine environment can also result from a wide range of activities on land. Human settlements, land use, construction of coastal infrastructure, agriculture, forestry, urban development, tourism and industry can affect the marine environment. Coastal erosion and siltation are of particular concern.

17.20. Marine pollution is also caused by shipping and sea-based activities. Approximately 600,000 tons of oil enter the oceans each year as a result of normal shipping operations, accidents and illegal discharges. With respect to offshore oil and gas activities, currently machinery space discharges are regulated internationally and six regional conventions to control platform discharges have been under consideration. The nature and extent of environmental impacts from offshore oil exploration and production activities generally account for a very small proportion of marine pollution.

17.21. A precautionary and anticipatory rather than a reactive approach is necessary to prevent the degradation of the marine environment. This requires, inter alia, the adoption of precautionary measures, environmental impact assessments, clean production techniques, recycling, waste audits and minimization, construction and/or improvement of sewage treatment facilities, quality management criteria for the proper handling of hazardous substances, and a comprehensive approach to damaging impacts from air, land and water. Any management framework must include the improvement of coastal human settlements and the integrated management and development of coastal areas.

Objectives

17.22. States, in accordance with the provisions of the United Nations Convention on the Law of the Sea on protection and preservation of the marine environment, commit themselves, in accordance with their policies, priorities and resources, to prevent, reduce and control degradation of the marine environment so as to maintain and improve its life-support and productive capacities. To this end, it is necessary to:

(a) Apply preventive, precautionary and anticipatory approaches so as to avoid degradation of the marine environment, as well as to reduce the risk of long-term or irreversible adverse effects upon it;

(b) Ensure prior assessment of activities that may have significant adverse impacts upon the marine environment;

(c) Integrate protection of the marine environment into relevant general environmental, social and economic development policies;

(d) Develop economic incentives, where appropriate, to apply clean technologies and other means consistent with the internalization of environmental costs, such as the polluter pays principle, so as to avoid degradation of the marine environment;

(e) Improve the living standards of coastal populations, particularly in developing countries, so as to contribute to reducing the degradation of the coastal and marine environment.

17.23. States agree that provision of additional financial resources, through appropriate international mechanisms, as well as access to cleaner technologies and relevant research, would be necessary to support action by developing countries to implement this commitment.

Activities

(a) Management-related activities

Prevention, reduction and control of degradation of the marine environment from land-based activities

17.24. In carrying out their commitment to deal with degradation of the marine environment from land-based activities, States should take action at the national level and, where appropriate, at the regional and subregional levels, in concert with action to implement programme area A, and should take account of the Montreal Guidelines for the Protection of the Marine Environment from Land-Based Sources.

17.25. To this end, States, with the support of the relevant international environmental, scientific, technical and financial organizations, should cooperate, *inter alia*, to:

(a) Consider updating, strengthening and extending the Montreal Guidelines, as appropriate;

(b) Assess the effectiveness of existing regional agreements and action plans, where appropriate, with a view to identifying means of strengthening action, where necessary, to prevent, reduce and control marine degradation caused by land-based activities;

(c) Initiate and promote the development of new regional agreements, where appropriate;

(d) Develop means of providing guidance on technologies to deal with the major types of pollution of the marine environment from land-based sources, according to the best scientific evidence;

(e) Develop policy guidance for relevant global funding mechanisms;

(f) Identify additional steps requiring international cooperation.

17.26. The UNEP Governing Council is invited to convene, as soon as practicable, an intergovernmental meeting on protection of the marine environment from land-based activities.

17.27. As concerns sewage, priority actions to be considered by States may include:

(a) Incorporating sewage concerns when formulating or reviewing coastal development plans, including human settlement plans;

(b) Building and maintaining sewage treatment facilities in accordance with national policies and capacities and international cooperation available;

(c) Locating coastal outfalls so as to maintain an acceptable level of environmental quality and to avoid exposing shell fisheries, water intakes and bathing areas to pathogens;

(d) Promoting environmentally sound co-treatments of domestic and compatible industrial effluents, with the introduction, where practicable, of controls on the entry of effluents that are not compatible with the system;

(e) Promoting primary treatment of municipal sewage discharged to rivers, estuaries and the sea, or other solutions appropriate to specific sites;

(f) Establishing and improving local, national, subregional and regional, as necessary, regulatory and monitoring programmes to control effluent discharge, using minimum sewage effluent guidelines and water quality criteria and giving due consideration to the characteristics of receiving bodies and the volume and type of pollutants.

17.28. As concerns other sources of pollution, priority actions to be considered by States may include:

(a) Establishing or improving, as necessary, regulatory and monitoring programmes to control effluent discharges and emissions, including the development and application of control and recycling technologies;

(b) Promoting risk and environmental impact assessments to help ensure an acceptable level of environmental quality;

(c) Promoting assessment and cooperation at the regional level, where appropriate, with respect to the input of point source pollutants from new installations;

(d) Eliminating the emission or discharge of organohalogen compounds that threaten to accumulate to dangerous levels in the marine environment;

(e) Reducing the emission or discharge of other synthetic organic compounds that threaten to accumulate to dangerous levels in the marine environment;

(f) Promoting controls over anthropogenic inputs of nitrogen and phosphorus that enter coastal waters where such problems as eutrophication threaten the marine environment or its resources;

(g) Cooperating with developing countries, through financial and technological support, to maximize the best practicable control and reduction of substances and wastes that are toxic, persistent or liable to bio-accumulate and to establish environmentally sound land-based waste disposal alternatives to sea dumping;

(h) Cooperating in the development and implementation of environmentally sound land-use techniques and practices to reduce run-off to water-courses and estuaries which would cause pollution or degradation of the marine environment;

(i) Promoting the use of environmentally less harmful pesticides and fertilizers and alternative methods for pest control, and considering the prohibition of those found to be environmentally unsound;

(j) Adopting new initiatives at national, subregional and regional levels for controlling the input of non-point source pollutants, which require broad changes in sewage and waste management, agricultural practices, mining, construction and transportation.

17.29. As concerns physical destruction of coastal and marine areas causing degradation of the marine environment, priority actions should include control and prevention of coastal erosion and siltation due to anthropogenic factors related to, inter alia, land-use and construction techniques and practices. Watershed management practices should be promoted so as to prevent, control and reduce degradation of the marine environment.

Prevention, reduction and control of degradation of the marine environment from sea-based activities

17.30. States, acting individually, bilaterally, regionally or multilaterally and within the framework of IMO and other relevant international organizations, whether subregional, regional or global, as appropriate, should assess the need for additional measures to address degradation of the marine environment:

(a) From shipping, by:

(i) Supporting wider ratification and implementation of relevant shipping conventions and protocols;

(ii) Facilitating the processes in (i), providing support to individual States upon request to help them overcome the obstacles identified by them;

(iii) Cooperating in monitoring marine pollution from ships, especially from illegal discharges (e.g., aerial surveillance), and enforcing MARPOL discharge, provisions more rigorously;

(iv) Assessing the state of pollution caused by ships in particularly sensitive areas identified by IMO and taking action to implement applicable measures, where necessary, within such areas to ensure compliance with generally accepted international regulations;

(v) Taking action to ensure respect of areas designated by coastal States, within their exclusive economic zones, consistent with international law, in order to protect and preserve rare or fragile ecosystems, such as coral reefs and mangroves;

(vi) Considering the adoption of appropriate rules on ballast water discharge to prevent the spread of non-indigenous organisms;

(vii) Promoting navigational safety by adequate charting of coasts and ship-routing, as appropriate;

(viii) Assessing the need for stricter international regulations to further reduce the risk of accidents and pollution from cargo ships (including bulk carriers);

(ix) Encouraging IMO and IAEA to work together to complete consideration of a code on the carriage of irradiated nuclear fuel in flasks on board ships;

(x) Revising and updating the IMO Code of Safety for Nuclear Merchant Ships and considering how best to implement a revised code;

(xi) Supporting the ongoing activity within IMO regarding development of appropriate measures for reducing air pollution from ships;

(xii) Supporting the ongoing activity within IMO regarding the development of an international regime governing the transportation of hazardous and noxious substances carried by ships and further considering whether the compensation funds similar to the ones established under the Fund Convention would be appropriate in respect of pollution damage caused by substances other than oil;

(b) From dumping, by:

(i) Supporting wider ratification, implementation and participation in relevant Conventions on dumping at sea, including early conclusion of a future strategy for the London Dumping Convention;

(ii) Encouraging the London Dumping Convention parties to take appropriate steps to stop ocean dumping and incineration of hazardous substances;

(c) From offshore oil and gas platforms, by assessing existing regulatory measures to address discharges, emissions and safety and assessing the need for additional measures;

(d) From ports, by facilitating establishment of port reception facilities for the collection of oily and chemical residues and garbage from ships, especially in MARPOL special areas, and promoting the establishment of smaller scale facilities in marinas and fishing harbours.

17.31. IMO and as appropriate, other competent United Nations organizations, when requested by the States concerned, should assess, where appropriate, the state of marine pollution in areas of congested shipping, such as heavily used international straits, with a view to ensuring compliance with generally accepted international regulations, particularly those related to illegal discharges from ships, in accordance with the provisions of Part III of the United Nations Convention on the Law of the Sea.

17.32. States should take measures to reduce water pollution caused by organotin compounds used in anti-fouling paints.

17.33. States should consider ratifying the Convention on Oil Pollution Preparedness, Response and Cooperation, which addresses, inter alia, the development of contingency plans on the national and international level, as appropriate, including provision of oil-spill response material and training of personnel, including its possible extension to chemical spill response.

17.34. States should intensify international cooperation to strengthen or establish, where necessary, regional oil/chemical-spill response centres and/or, as appropriate, mechanisms in cooperation with relevant subregional, regional or global intergovernmental organizations and, where appropriate, industry-based organizations.

(b) Data and information

17.35. States should, as appropriate, and in accordance with the means at their disposal and with due regard for their technical and scientific capacity and resources, make systematic observations on the state of the marine environment. To this end, States should, as appropriate, consider:

(a) Establishing systematic observation systems to measure marine environmental quality, including causes and effects of marine degradation, as a basis for management;

(b) Regularly exchanging information on marine degradation caused by land-based and sea-based activities and on actions to prevent, control and reduce such degradation;

(c) Supporting and expanding international programmes for systematic observations such as the mussel watch programme, building on existing facilities with special attention to developing countries;

(d) Establishing a clearing-house on marine pollution control information, including processes and technologies to address marine pollution control and to support their transfer to developing countries and other countries with demonstrated needs;

(e) Establishing a global profile and database providing information on the sources, types, amounts and effects of pollutants reaching the marine environment from land-based activities in coastal areas and sea-based sources;

(f) Allocating adequate funding for capacity-building and training programmes to ensure the full participation of developing countries, in particular, in any international scheme under the organs and organizations of the United Nations system for the collection, analysis and use of data and information.

Means of implementation

(a) Financing and cost evaluation

17.36. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $200 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

17.37. National, subregional and regional action programmes will, where appropriate, require technology transfer, in conformity with chapter 34, and financial resources, particularly where developing countries are concerned, including:

(a) Assistance to industries in identifying and adopting clean production or cost-effective pollution control technologies;

(b) Planning development and application of low-cost and low-maintenance sewage installation and treatment technologies for developing countries;

(c) Equipment of laboratories to observe systematically human and other impacts on the marine environment;

(d) Identification of appropriate oil- and chemical-spill control materials, including low-cost locally available materials and techniques, suitable for pollution emergencies in developing countries;

(e) Study of the use of persistent organohalogens that are liable to accumulate in the marine environment to identify those that cannot be adequately controlled and to provide a basis for a decision on a time schedule for phasing them out as soon as practicable;

(f) Establishment of a clearing-house for information on marine pollution control, including processes and technologies to address marine pollution control, and support for their transfer to developing and other countries with demonstrated needs.

(c) Human resource development

17.38. States individually or in cooperation with each other and with the support of international organizations, whether subregional, regional or global, as appropriate, should:

(a) Provide training for critical personnel required for the adequate protection of the marine environment as identified by training needs' surveys at the national, regional or subregional levels;

(b) Promote the introduction of marine environmental protection topics into the curriculum of marine studies programmes;

(c) Establish training courses for oil- and chemical-spill response personnel, in cooperation, where appropriate, with the oil and chemical industries;

(d) Conduct workshops on environmental aspects of port operations and development;

(e) Strengthen and provide secure financing for new and existing specialized international centres of professional maritime education;

(f) States should, through bilateral and multilateral cooperation, support and supplement the national efforts of developing countries as regards human resource development in relation to prevention and reduction of degradation of the marine environment.

(d) Capacity-building

17.39. National planning and coordinating bodies should be given the capacity and authority to review all land-based activities and sources of pollution for their impacts on the marine environment and to propose appropriate control measures.

17.40. Research facilities should be strengthened or, where appropriate, developed in developing countries for systematic observation of marine pollution, environmental impact assessment and development of control recommendations and should be managed and staffed by local experts.

17.41. Special arrangements will be needed to provide adequate financial and technical resources to assist developing countries in preventing and solving problems associated with activities that threaten the marine environment.

17.42. An international funding mechanism should be created for the application of appropriate sewage treatment technologies and building sewage treatment facilities, including grants or concessional loans from international agencies and appropriate regional funds, replenished at least in part on a revolving basis by user fees.

17.43. In carrying out these programme activities, particular attention needs to be given to the problems of developing countries that would bear an unequal burden because of their lack of facilities, expertise or technical capacities.

C. Sustainable use and conservation of marine living resources of the high seas

Basis for action

17.44. Over the last decade, fisheries on the high seas have considerably expanded and currently represent approximately 5 per cent of total world landings. The provisions of the United Nations Convention on the Law of the Sea on the marine living resources of the high seas sets forth rights and obligations of States with respect to conservation and utilization of those resources.

17.45. However, management of high seas fisheries, including the adoption, monitoring and enforcement of effective conservation measures, is inadequate in many areas and some resources are overutilized. There are problems of unregulated fishing, overcapitalization, excessive fleet size, vessel reflagging to escape controls, insufficiently selective gear, unreliable databases and lack of sufficient cooperation between States. Action by States whose nationals and vessels fish on the high seas, as well as cooperation at the bilateral, subregional, regional and global levels, is essential particularly for highly migratory species and straddling stocks. Such action and cooperation should address inadequacies in fishing practices, as well as in biological knowledge, fisheries statistics and improvement of systems for handling data. Emphasis should also be on multi-species management and other approaches that take into account the relationships among species, especially in addressing depleted species, but also in identifying the potential of underutilized or unutilized populations.

Objectives

17.46. States commit themselves to the conservation and sustainable use of marine living resources on the high seas. To this end, it is necessary to:

(a) Develop and increase the potential of marine living resources to meet human nutritional needs, as well as social, economic and development goals;

(b) Maintain or restore populations of marine species at levels that can produce the maximum sustainable yield as qualified by relevant environmental and economic factors, taking into consideration relationships among species;

(c) Promote the development and use of selective fishing gear and practices that minimize waste in the catch of target species and minimize by-catch of non-target species;

(d) Ensure effective monitoring and enforcement with respect to fishing activities;

(e) Protect and restore endangered marine species;

(f) Preserve habitats and other ecologically sensitive areas;

(g) Promote scientific research with respect to the marine living resources in the high seas.

17.47. Nothing in paragraph 17.46 above restricts the right of a State or the competence of an international organization, as appropriate, to prohibit, limit or regulate the exploitation of marine mammals on the high seas more strictly than provided for in that paragraph. States shall cooperate with a view to the conservation of marine mammals and, in the case of cetaceans, shall in particular work through the appropriate international organizations for their conservation, management and study.

17.48. The ability of developing countries to fulfil the above objectives is dependent upon their capabilities, including the financial, scientific and technological means at their disposal. Adequate financial, scientific and technological cooperation should be provided to support action by them to implement these objectives.

Activities

(a) Management-related activities

17.49. States should take effective action, including bilateral and multilateral cooperation, where appropriate at the subregional, regional and global levels, to ensure that high seas fisheries are managed in accordance with the provisions of the United Nations Convention on the Law of the Sea. In particular, they should:

(a) Give full effect to these provisions with regard to fisheries populations whose ranges lie both within and beyond exclusive economic zones (straddling stocks);

(b) Give full effect to these provisions with regard to highly migratory species;

(c) Negotiate, where appropriate, international agreements for the effective management and conservation of fishery stocks;

(d) Define and identify appropriate management units.

17.50. States should convene, as soon as possible, an intergovernmental conference under United Nations auspices, taking into account relevant activities at the subregional, regional and global levels, with a view to promoting effective implementation of the provisions of the United Nations

Convention on the Law of the Sea on straddling fish stocks and highly migratory fish stocks. The conference, drawing, inter alia, on scientific and technical studies by FAO, should identify and assess existing problems related to the conservation and management of such fish stocks, and consider means of improving cooperation on fisheries among States, and formulate appropriate recommendations. The work and the results of the conference should be fully consistent with the provisions of the United Nations Convention on the Law of the Sea, in particular the rights and obligations of coastal States and States fishing on the high seas.

17.51. States should ensure that fishing activities by vessels flying their flags on the high seas take place in such a manner as to minimize incidental catch.

17.52. States should take effective action consistent with international law to monitor and control fishing activities by vessels flying their flags on the high seas to ensure compliance with applicable conservation and management rules, including full, detailed, accurate and timely reporting of catches and effort.

17.53. States should take effective action, consistent with international law, to deter reflagging of vessels by their nationals as a means of avoiding compliance with applicable conservation and management rules for fishing activities on the high seas.

17.54. States should prohibit dynamiting, poisoning and other comparable destructive fishing practices.

17.55. States should fully implement General Assembly resolution 46/215 on large-scale pelagic drift-net fishing.

17.56. States should take measures to increase the availability of marine living resources as human food by reducing wastage, post-harvest losses and discards, and improving techniques of processing, distribution and transportation.

(b) Data and information

17.57. States, with the support of international organizations, whether subregional, regional or global, as appropriate, should cooperate to:

(a) Promote enhanced collection of data necessary for the conservation and sustainable use of the marine living resources of the high seas;

(b) Exchange on a regular basis up-to-date data and information adequate for fisheries assessment;

(c) Develop and share analytical and predictive tools, such as stock assessment and bioeconomic models;

(d) Establish or expand appropriate monitoring and assessment programmes.

(c) International and regional cooperation and coordination

17.58. States, through bilateral and multilateral cooperation and within the framework of subregional and regional fisheries bodies, as appropriate, and with the support of other international intergovernmental agencies, should assess high seas resource potentials and develop profiles of all stocks (target and non-target).

17.59. States should, where and as appropriate, ensure adequate levels of coordination and cooperation in enclosed and semi-enclosed seas and between subregional, regional and global intergovernmental fisheries bodies.

17.60. Effective cooperation within existing subregional, regional or global fisheries bodies should be encouraged. Where such organizations do not exist, States should, as appropriate, cooperate to establish such organizations.

17.61. States with an interest in a high seas fishery regulated by an existing subregional and/or regional high seas fisheries organization of which they are not members should be encouraged to join that organization, where appropriate.

17.62. States recognize:

(a) The responsibility of the International Whaling Commission for the conservation and management of whale stocks and the regulation of whaling pursuant to the 1946 International Convention for the Regulation of Whaling;

(b) The work of the International Whaling Commission Scientific Committee in carrying out studies of large whales in particular, as well as of other cetaceans;

(c) The work of other organizations, such as the Inter-American Tropical Tuna Commission and the Agreement on Small Cetaceans in the Baltic and North Sea under the Bonn Convention, in the conservation, management and study of cetaceans and other marine mammals.

17.63. States should cooperate for the conservation, management and study of cetaceans.

Means of implementation

(a) Financing and cost evaluation

17.64. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $12 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

17.65. States, with the support of relevant international organizations, where necessary, should develop collaborative technical and research programmes to improve understanding of the life cycles and migrations of species found on the high seas, including identifying critical areas and life stages.

17.66. States, with the support of relevant international organizations, whether subregional, regional or global, as appropriate, should:

(a) Develop databases on the high seas marine living resources and fisheries;

(b) Collect and correlate marine environmental data with high seas marine living resources data, including the impacts of regional and global changes brought about by natural causes and by human activities;

(c) Cooperate in coordinating research programmes to provide the knowledge necessary to manage high seas resources.

(c) Human resource development

17.67. Human resource development at the national level should be targeted at both development and management of high seas resources, including training in high seas fishing techniques and in high seas resource assessment, strengthening cadres of personnel to deal with high seas resource management and conservation and related environmental issues, and training observers and inspectors to be placed on fishing vessels.

(d) Capacity-building

17.68. States, with the support, where appropriate, of relevant international organizations, whether subregional, regional or global, should cooperate to develop or upgrade systems and institutional structures for monitoring, control and surveillance, as well as the research capacity for assessment of marine living resource populations.

17.69. Special support, including cooperation among States, will be needed to enhance the capacities of developing countries in the areas of data and information, scientific and technological means, and human resource development in order to participate effectively in the conservation and sustainable utilization of high seas marine living resources.

D. Sustainable use and conservation of marine living resources under national jurisdiction

Basis for action

17.70. Marine fisheries yield 80 to 90 million tons of fish and shellfish per year, 95 per cent of which is taken from waters under national jurisdiction. Yields have increased nearly fivefold over the past four decades. The provisions of the United Nations Convention on the Law of the Sea on marine living resources of the exclusive economic zone and other areas under national jurisdiction set forth rights and obligations of States with respect to conservation and utilization of those resources.

17.71. Marine living resources provide an important source of protein in many countries and their use is often of major importance to local communities and indigenous people. Such resources provide food and livelihoods to millions of people and, if sustainably utilized, offer increased potential to meet nutritional and social needs, particularly in developing countries. To realize this potential requires improved knowledge and identification of marine living resource stocks, particularly of underutilized and unutilized stocks and species, use of new technologies, better handling and processing facilities to avoid wastage, and improved quality and training of skilled personnel to manage and conserve effectively the marine living resources of the exclusive economic zone and other areas under national jurisdiction. Emphasis should also be on multi-species management and other approaches that take into account the relationships among species.

17.72. Fisheries in many areas under national jurisdiction face mounting problems, including local overfishing, unauthorized incursions by foreign fleets, ecosystem degradation, overcapitalization and excessive fleet sizes, underevaluation of catch, insufficiently selective gear, unreliable databases, and increasing competition between artisanal and large-scale fishing, and between fishing and other types of activities.

17.73. Problems extend beyond fisheries. Coral reefs and other marine and coastal habitats, such as mangroves and estuaries, are among the most highly diverse, integrated and productive of the Earth's ecosystems. They often serve important ecological functions, provide coastal protection, and are critical resources for food, energy, tourism and economic development. In many parts of the world, such marine and coastal systems are under stress or are threatened from a variety of sources, both human and natural.

Objectives

17.74. Coastal States, particularly developing countries and States whose economies are overwhelmingly dependent on the exploitation of the marine living resources of their exclusive economic zones, should obtain the full social and economic benefits from sustainable utilization of marine living resources within their exclusive economic zones and other areas under national jurisdiction.

17.75. States commit themselves to the conservation and sustainable use of marine living resources under national jurisdiction. To this end, it is necessary to:

(a) Develop and increase the potential of marine living resources to meet human nutritional needs, as well as social, economic and development goals;

(b) Take into account traditional knowledge and interests of local communities, small-scale artisanal fisheries and indigenous people in development and management programmes;

(c) Maintain or restore populations of marine species at levels that can produce the maximum sustainable yield as qualified by relevant environmental and economic factors, taking into consideration relationships among species;

(d) Promote the development and use of selective fishing gear and practices that minimize waste in the catch of target species and minimize by-catch of non-target species;

(e) Protect and restore endangered marine species;

(f) Preserve rare or fragile ecosystems, as well as habitats and other ecologically sensitive areas.

17.76. Nothing in paragraph 17.75 above restricts the right of a coastal State or the competence of an international organization, as appropriate, to prohibit, limit or regulate the exploitation of marine mammals more strictly than provided for in that paragraph. States shall cooperate with a view to the conservation of marine mammals and in the case of cetaceans shall in particular work through the appropriate international organizations for their conservation, management and study.

17.77. The ability of developing countries to fulfil the above objectives is dependent upon their capabilities, including the financial, scientific and technological means at their disposal. Adequate financial, scientific and technological cooperation should be provided to support action by them to implement these objectives.

Activities

(a) Management-related activities

17.78. States should ensure that marine living resources of the exclusive economic zone and other areas under national jurisdiction are conserved and managed in accordance with the provisions of the United Nations Convention on the Law of the Sea.

17.79. States, in implementing the provisions of the United Nations Convention on the Law of the Sea, should address the issues of straddling stocks and highly migratory species, and, taking fully into account the objective set out in paragraph 17.74, access to the surplus of allowable catches.

17.80. Coastal States, individually or through bilateral and/or multilateral cooperation and with the support, as appropriate of international organizations, whether subregional, regional or global, should _inter alia_:

(a) Assess the potential of marine living resources, including underutilized or unutilized stocks and species, by developing inventories, where necessary, for their conservation and sustainable use;

(b) Implement strategies for the sustainable use of marine living resources, taking into account the special needs and interests of small-scale artisanal fisheries, local communities and indigenous people to meet human nutritional and other development needs;

(c) Implement, in particular in developing countries, mechanisms to develop mariculture, aquaculture and small-scale, deep-sea and oceanic fisheries within areas under national jurisdiction where assessments show that marine living resources are potentially available;

(d) Strengthen their legal and regulatory frameworks, where appropriate, including management, enforcement and surveillance capabilities, to regulate activities related to the above strategies;

(e) Take measures to increase the availability of marine living resources as human food by reducing wastage, post-harvest losses and discards, and improving techniques of processing, distribution and transportation;

(f) Develop and promote the use of environmentally sound technology under criteria compatible with the sustainable use of marine living resources, including assessment of the environmental impact of major new fishery practices;

(g) Enhance the productivity and utilization of their marine living resources for food and income.

17.81. Coastal States should explore the scope for expanding recreational and tourist activities based on marine living resources, including those for providing alternative sources of income. Such activities should be compatible with conservation and sustainable development policies and plans.

17.82. Coastal States should support the sustainability of small-scale artisanal fisheries. To this end, they should, as appropriate:

(a) Integrate small-scale artisanal fisheries development in marine and coastal planning, taking into account the interests and, where appropriate, encouraging representation of fishermen, small-scale fisherworkers, women, local communities and indigenous people;

(b) Recognize the rights of small-scale fishworkers and the special situation of indigenous people and local communities, including their rights to utilization and protection of their habitats on a sustainable basis;

(c) Develop systems for the acquisition and recording of traditional knowledge concerning marine living resources and environment and promote the incorporation of such knowledge into management systems.

17.83. Coastal States should ensure that, in the negotiation and implementation of international agreements on the development or conservation of marine living resources, the interests of local communities and indigenous people are taken into account, in particular their right to subsistence.

17.84. Coastal States, with the support, as appropriate, of international organizations, should conduct analyses of the potential for aquaculture in marine and coastal areas under national jurisdiction and apply appropriate safeguards as to the introduction of new species.

17.85. States should prohibit dynamiting, poisoning and other comparable destructive fishing practices.

17.86. States should identify marine ecosystems exhibiting high levels of biodiversity and productivity and other critical habitat areas and should provide necessary limitations on use in these areas, through, inter alia, designation of protected areas. Priority should be accorded, as appropriate, to:

(a) Coral reef ecosystems;

(b) Estuaries;

(c) Temperate and tropical wetlands, including mangroves;

(d) Seagrass beds;

(e) Other spawning and nursery areas.

(b) Data and information

17.87. States, individually or through bilateral and multilateral cooperation and with the support, as appropriate, of international organizations, whether subregional, regional or global, should:

(a) Promote enhanced collection and exchange of data necessary for the conservation and sustainable use of the marine living resources under national jurisdiction;

(b) Exchange on a regular basis up-to-date data and information necessary for fisheries assessment;

(c) Develop and share analytical and predictive tools, such as stock assessment and bioeconomic models;

(d) Establish or expand appropriate monitoring and assessment programmes;

(e) Complete or update marine biodiversity, marine living resource and critical habitat profiles of exclusive economic zones and other areas under national jurisdiction, taking account of changes in the environment brought about by natural causes and human activities.

(c) International and regional cooperation and coordination

17.88. States, through bilateral and multilateral cooperation, and with the support of relevant United Nations and other international organizations, should cooperate to:

(a) Develop financial and technical cooperation to enhance the capacities of developing countries in small-scale and oceanic fisheries, as well as in coastal aquaculture and mariculture;

(b) Promote the contribution of marine living resources to eliminate malnutrition and to achieve food self-sufficiency in developing countries, inter alia, by minimizing post-harvest losses and managing stocks for guaranteed sustainable yields;

(c) Develop agreed criteria for the use of selective fishing gear and practices to minimize waste in the catch of target species and minimize by-catch of non-target species;

(d) Promote seafood quality, including through national quality assurance systems for seafood, in order to promote access to markets, improve consumer confidence and maximize economic returns.

17.89. States should, where and as appropriate, ensure adequate coordination and cooperation in enclosed and semi-enclosed seas and between subregional, regional and global intergovernmental fisheries bodies.

17.90. States recognize:

(a) The responsibility of the International Whaling Commission for the conservation and management of whale stocks and the regulation of whaling pursuant to the 1946 International Convention for the Regulation of Whaling;

(b) The work of the International Whaling Commission Scientific Committee in carrying out studies of large whales in particular, as well as of other cetaceans;

(c) The work of other organizations, such as the Inter-American Tropical Tuna Commission and the Agreement on Small Cetaceans in the Baltic and North Sea under the Bonn Convention, in the conservation, management and study of cetaceans and other marine mammals.

17.91. States should cooperate for the conservation, management and study of cetaceans.

Means of implementation

(a) Financing and cost evaluation

17.92. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $6 billion, including about $60 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

17.93. States, with the support of relevant intergovernmental organizations, as appropriate, should:

(a) Provide for the transfer of environmentally sound technologies to develop fisheries, aquaculture and mariculture, particularly to developing countries;

(b) Accord special attention to mechanisms for transferring resource information and improved fishing and aquaculture technologies to fishing communities at the local level;

(c) Promote the study, scientific assessment and use of appropriate traditional management systems;

(d) Consider observing, as appropriate, the FAO/ICES Code of Practice for Consideration of Transfer and Introduction of Marine and Freshwater Organisms;

(e) Promote scientific research on marine areas of particular importance for marine living resources, such as areas of high diversity, endemism and productivity and migratory stopover points.

(c) Human resource development

17.94. States individually, or through bilateral and multilateral cooperation and with the support of relevant international organizations, whether subregional, regional or global, as appropriate, should encourage and provide support for developing countries, inter alia, to:

(a) Expand multidisciplinary education, training and research on marine living resources, particularly in the social and economic sciences;

(b) Create training opportunities at national and regional levels to support artisanal (including subsistence) fisheries, to develop small-scale use of marine living resources and to encourage equitable participation of local communities, small-scale fish workers, women and indigenous people;

(c) Introduce topics relating to the importance of marine living resources in educational curricula at all levels.

(d) Capacity-building

17.95. Coastal States, with the support of relevant subregional, regional and global agencies, where appropriate, should:

(a) Develop research capacities for assessment of marine living resource populations and monitoring;

(b) Provide support to local fishing communities, in particular those that rely on fishing for subsistence, indigenous people and women, including, as appropriate, the technical and financial assistance to organize, maintain, exchange and improve traditional knowledge of marine living resources and fishing techniques, and upgrade knowledge on marine ecosystems;

(c) Establish sustainable aquaculture development strategies, including environmental management in support of rural fish-farming communities;

(d) Develop and strengthen, where the need may arise, institutions capable of implementing the objectives and activities related to the conservation and management of marine living resources.

17.96. Special support, including cooperation among States, will be needed to enhance the capacities of developing countries in the areas of data and information, scientific and technological means and human resource development in order to enable them to participate effectively in the conservation and sustainable use of marine living resources under national jurisdiction.

E. Addressing critical uncertainties for the management of the marine environment and climate change

Basis for action

17.97. The marine environment is vulnerable and sensitive to climate and atmospheric changes. Rational use and development of coastal areas, all seas and marine resources, as well as conservation of the marine environment, requires the ability to determine the present state of these systems and to predict future conditions. The high degree of uncertainty in present information inhibits effective management and limits the ability to make predictions and assess environmental change. Systematic collection of data on marine environmental parameters will be needed to apply integrated management approaches and to predict effects of global climate change and of atmospheric phenomena, such as ozone depletion, on living marine resources and the marine environment. In order to determine the role of the oceans and all seas in driving global systems and to predict natural and human-induced changes in marine and coastal environments, the mechanisms to collect, synthesize and disseminate information from research and systematic observation activities need to be restructured and reinforced considerably.

17.98. There are many uncertainties about climate change and particularly about sealevel rise. Small increases in sealevel have the potential of causing significant damage to small islands and low-lying coasts. Response strategies should be based on sound data. A long-term cooperative research commitment is needed to provide the data required for global climate models and to reduce uncertainty. Meanwhile, precautionary measures should be undertaken to diminish the risks and effects, particularly on small islands and on low-lying and coastal areas of the world.

17.99. Increased ultraviolet radiation derived from ozone depletion has been reported in some areas of the world. An assessment of its effects in the marine environment is needed to reduce uncertainty and to provide a basis for action.

Objectives

17.100. States, in accordance with provisions of the United Nations Convention on the Law of the Sea on marine scientific research, commit themselves to improving the understanding of the marine environment and its role on global processes. To this end, it is necessary to:

(a) Promote scientific research on and systematic observation of the marine environment within the limits of national jurisdiction and high seas, including interactions with atmospheric phenomena, such as ozone depletion;

(b) Promote exchange of data and information resulting from scientific research and systematic observation and from traditional ecological knowledge and ensure its availability to policy makers and the public at the national level;

(c) Cooperate with a view to the development of standard inter-calibrated procedures, measuring techniques, data storage and management capabilities for scientific research on and systematic observation of the marine environment.

Activities

(a) Management-related activities

17.101. States should consider, inter alia:

(a) Coordinating national and regional observation programmes for coastal and near-shore phenomena related to climate change and for research parameters essential for marine and coastal management in all regions;

(b) Providing improved forecasts of marine conditions for the safety of inhabitants of coastal areas and for the efficiency of maritime operations;

(c) Cooperating with a view to adopting special measures to cope with and adapt to potential climate change and sealevel rise, including the development of globally accepted methodologies for coastal vulnerability assessment, modelling and response strategies particularly for priority areas, such as small islands and low-lying and critical coastal areas;

(d) Identifying ongoing and planned programmes of systematic observation of the marine environment, with a view to integrating activities and establishing priorities to address critical uncertainties for oceans and all seas;

(e) Initiating a programme of research to determine the marine biological effects of increased levels of ultraviolet rays due to the depletion of the stratospheric ozone layer and to evaluate the possible effects.

17.102. Recognizing the important role that oceans and all seas play in attenuating potential climate change, IOC and other relevant competent United Nations bodies, with the support of countries having the resources and expertise, should carry out analysis, assessments and systematic observation of the role of oceans as a carbon sink.

(b) Data and information

17.103. States should consider, inter alia:

(a) Increasing international cooperation particularly with a view to strengthening national scientific and technological capabilities for analysing, assessing and predicting global climate and environmental change;

(b) Supporting the role of the IOC in cooperation with WMO, UNEP and other international organizations in the collection, analysis and distribution of data and information from the oceans and all seas, including as appropriate, through the proposed Global Ocean Observing System, giving special attention to the need for IOC to develop fully the strategy for providing training and technical assistance for developing countries through its Training, Education and Mutual Assistance (TEMA) programme;

(c) Creating national multisectoral information bases, covering the results of research and systematic observation programmes;

(d) Linking these databases to existing data and information services and mechanisms, such as World Weather Watch and Earthwatch;

(e) Cooperating with a view to the exchange of data and information and its storage and archiving through the world and regional data centres;

(f) Cooperating to ensure full participation of developing countries, in particular, in any international scheme under the organs and organizations of the United Nations system for the collection, analysis and use of data and information.

(c) International and regional cooperation and coordination

17.104. States should consider bilaterally and multilaterally and in cooperation with international organizations, whether subregional, regional, interregional or global, where appropriate:

(a) Providing technical cooperation in developing the capacity of coastal and island States for marine research and systematic observation and for using its results;

(b) Strengthening existing national institutions and creating, where necessary, international analysis and prediction mechanisms in order to prepare and exchange regional and global oceanographic analyses and forecasts and to provide facilities for international research and training at national, subregional and regional levels, where applicable.

17.105. In recognition of the value of Antarctica as an area for the conduct of scientific research, in particular research essential to understanding the global environment, States carrying out such research activities in Antarctica should, as provided for in Article III of the Antarctic Treaty, continue to:

(a) Ensure that data and information resulting from such research are freely available to the international community;

(b) Enhance access of the international scientific community and specialized agencies of the United Nations to such data and information, including the encouragement of periodic seminars and symposia.

17.106. States should strengthen high-level inter-agency, subregional, regional and global coordination, as appropriate, and review mechanisms to develop and integrate systematic observation networks. This would include:

(a) Review of existing regional and global databases;

(b) Mechanisms to develop comparable and compatible techniques, validate methodologies and measurements, organize regular scientific reviews, develop options for corrective measures, agree on formats for presentation and storage, and communicate the information gathered to potential users;

(c) Systematic observation of coastal habitats and sealevel changes, inventories of marine pollution sources and reviews of fisheries statistics;

(d) Organization of periodic assessments of ocean and all seas and coastal area status and trends.

17.107. International cooperation, through relevant organizations within the United Nations system, should support countries to develop and integrate regional systematic long-term observation programmes, when applicable, into the Regional Seas Programmes in a coordinated fashion to implement, where appropriate, subregional, regional and global observing systems based on the principle of exchange of data. One aim should be the predicting of the effects of climate-related emergencies on existing coastal physical and socio-economic infrastructure.

17.108. Based on the results of research on the effects of the additional ultraviolet radiation reaching the Earth's surface, in the fields of human health, agriculture and marine environment, States and international organizations should consider taking appropriate remedial measures.

Means of implementation

(a) Financing and cost evaluation

17.109. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $750 million, including about $480 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

17.110. Developed countries should provide the financing for the further development and implementation of the Global Ocean Observing System.

(b) Scientific and technological means

17.111. To address critical uncertainties through systematic coastal and marine observations and research, coastal States should cooperate in the development of procedures that allow for comparable analysis and soundness of data. They should also cooperate on a subregional and regional basis, through existing programmes where applicable, share infrastructure and expensive and sophisticated equipment, develop quality assurance procedures and develop human resources jointly. Special attention should be given to transfer of scientific and technological knowledge and means to support States, particularly developing countries, in the development of endogenous capabilities.

17.112. International organizations should support, when requested, coastal countries in implementing research projects on the effects of additional ultraviolet radiation.

(c) Human resource development

17.113. States, individually or through bilateral and multilateral cooperation and with the support, as appropriate, of international organizations whether subregional, regional or global, should develop and implement comprehensive programmes, particularly in developing countries, for a broad and coherent approach to meeting their core human resource needs in the marine sciences.

(d) Capacity-building

17.114. States should strengthen or establish as necessary, national scientific and technological oceanographic commissions or equivalent bodies to develop, support and coordinate marine science activities and work closely with international organizations.

17.115. States should use existing subregional and regional mechanisms, where applicable, to develop knowledge of the marine environment, exchange information, organize systematic observations and assessments, and make the most effective use of scientists, facilities and equipment. They should also cooperate in the promotion of endogenous research capabilities in developing countries.

F. Strengthening international, including regional, cooperation and coordination

Basis for action

17.116. It is recognized that the role of international cooperation is to support and supplement national efforts. Implementation of strategies and activities under the programme areas relative to marine and coastal areas and seas requires effective institutional arrangements at national, subregional, regional and global levels, as appropriate. There are numerous national and international, including regional, institutions, both within and outside the United Nations system, with competence in marine issues, and there is a need to improve coordination and strengthen links among them. It is also important to ensure that an integrated and multisectoral approach to marine issues is pursued at all levels.

Objectives

17.117. States commit themselves, in accordance with their policies, priorities and resources, to promoting institutional arrangements necessary to support the implementation of the programme areas in this chapter. To this end, it is necessary, as appropriate, to:

(a) Integrate relevant sectoral activities addressing environment and development in marine and coastal areas at national, subregional, regional and global levels, as appropriate;

(b) Promote effective information exchange and, where appropriate, institutional linkages between bilateral and multilateral national, regional, subregional and interregional institutions dealing with environment and development in marine and coastal areas;

(c) Promote within the United Nations system, regular intergovernmental review and consideration of environment and development issues with respect to marine and coastal areas;

(d) Promote the effective operation of coordinating mechanisms for the components of the United Nations system dealing with issues of environment and development in marine and coastal areas, as well as links with relevant international development bodies.

Activities

(a) Management-related activities

Global

17.118. The General Assembly should provide for regular consideration, within the United Nations system, at the intergovernmental level of general marine and coastal issues, including environment and development matters, and should request the Secretary-General and executive heads of United Nations agencies and organizations to:

(a) Strengthen coordination and develop improved arrangements among the relevant United Nations organizations with major marine and coastal responsibilities, including their subregional and regional components;

(b) Strengthen coordination between those organizations and other United Nations organizations, institutions and specialized agencies dealing with development, trade and other related economic issues, as appropriate;

(c) Improve representation of United Nations agencies dealing with the marine environment in United Nations system-wide coordination efforts;

(d) Promote, where necessary, greater collaboration between the United Nations agencies and subregional and regional coastal and marine programmes;

(e) Develop a centralized system to provide for information on legislation and advice on implementation of legal agreements on marine environmental and development issues.

17.119. States recognize that environmental policies should deal with the root causes of environmental degradation, thus preventing environmental measures from resulting in unnecessary restrictions to trade. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing international environmental problems should, as far as possible, be based on an international consensus. Domestic measures targeted to achieve certain environmental objectives may need trade measures to render them effective. Should trade policy measures be found necessary for the enforcement of environmental policies, certain principles and rules should apply. These could include, inter alia, the principle of non-discrimination; the principle that the trade measure chosen should be the least trade-restrictive necessary to achieve the objectives; an obligation to ensure transparency in the use of trade measures related to the environment and to provide adequate notification of national regulations; and the need to give consideration to the special conditions and development requirements of developing countries as they move towards internationally agreed environmental objectives.

Subregional and regional

17.120. States should consider, as appropriate:

(a) Strengthening, and extending where necessary, intergovernmental regional cooperation, the Regional Seas Programmes of UNEP, regional and subregional fisheries organizations and regional commissions;

(b) Introduce, where necessary, coordination among relevant United Nations and other multilateral organizations at the subregional and regional levels, including consideration of co-location of their staff;

(c) Arrange for periodic intraregional consultations;

(d) Facilitate access to and use of expertise and technology through relevant national bodies to subregional and regional centres and networks, such as the Regional Centres for Marine Technology.

(b) Data and information

17.121. States should, where appropriate:

(a) Promote exchange of information on marine and coastal issues;

(b) Strengthen the capacity of international organizations to handle information and support the development of national, subregional and regional data and information systems, where appropriate. This could also include networks linking countries with comparable environmental problems;

(c) Further develop existing international mechanisms such as Earthwatch and GESAMP.

Means of implementation

(a) Financing and cost evaluation

17.122. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $50 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means, human resource development and capacity-building

17.123. The means of implementation outlined in the other programme areas on marine and coastal issues, under the sections on Scientific and technological means, human resource development and capacity-building are entirely relevant for this programme area as well. Additionally, States should, through international cooperation, develop a comprehensive programme for meeting the core human resource needs in marine sciences at all levels.

G. Sustainable development of small islands

Basis for action

17.124. Small island developing States, and islands supporting small communities are a special case both for environment and development. They are ecologically fragile and vulnerable. Their small size, limited resources, geographic dispersion and isolation from markets, place them at a disadvantage economically and prevent economies of scale. For small island developing States the ocean and coastal environment is of strategic importance and constitutes a valuable development resource.

17.125. Their geographic isolation has resulted in their habitation of a comparatively large number of unique species of flora and fauna, giving them a very high share of global biodiversity. They also have rich and diverse cultures with special adaptations to island environments and knowledge of the sound management of island resources.

17.126. Small island developing States have all the environmental problems and challenges of the coastal zone concentrated in a limited land area. They are considered extremely vulnerable to global warming and sealevel rise, with certain small low-lying islands facing the increasing threat of the loss of their entire national territories. Most tropical islands are also now experiencing the more immediate impacts of increasing frequency of cyclones, storms and hurricanes associated with climate change. These are causing major set-backs to their socio-economic development.

17.127. Because small island development options are limited, there are special challenges to planning for and implementing sustainable development. Small island developing States will be constrained in meeting these challenges without the cooperation and assistance of the international community.

Objectives

17.128. States commit themselves to addressing the problems of sustainable development of small island developing States. To this end, it is necessary:

(a) To adopt and implement plans and programmes to support the sustainable development and utilization of their marine and coastal resources, including meeting essential human needs, maintaining biodiversity and improving the quality of life for island people;

(b) To adopt measures which will enable small island developing States to cope effectively, creatively and sustainably with environmental change and to mitigate impacts and reduce the threats posed to marine and coastal resources.

Activities

(a) Management-related activities

17.129. Small island developing States, with the assistance as appropriate of the international community and on the basis of existing work of national and international organizations, should:

(a) Study the special environmental and developmental characteristics of small islands, producing an environmental profile and inventory of their natural resources, critical marine habitats and biodiversity;

(b) Develop techniques for determining and monitoring the carrying capacity of small islands under different development assumptions and resource constraints;

(c) Prepare medium- and long-term plans for sustainable development that emphasize multiple use of resources, integrate environmental considerations with economic and sectoral planning and policies, define measures for maintaining cultural and biological diversity and conserve endangered species and critical marine habitats;

(d) Adapt coastal area management techniques, such as planning, siting and environmental impact assessments, using Geographical Information Systems (GIS), suitable to the special characteristics of small islands, taking into account the traditional and cultural values of indigenous people of island countries;

(e) Review the existing institutional arrangements and identify and undertake appropriate institutional reforms essential to the effective implementation of sustainable development plans, including intersectoral coordination and community participation in the planning process;

(f) Implement sustainable development plans, including the review and modification of existing unsustainable policies and practices;

(g) Based on precautionary and anticipatory approaches, design and implement rational response strategies to address the environmental, social and economic impacts of climate change and sealevel rise, and prepare appropriate contingency plans;

(h) Promote environmentally sound technology for sustainable development within small island developing States and identify technologies that should be excluded because of their threats to essential island ecosystems.

(b) Data and information

17.130. Additional information on the geographic, environmental, cultural and socio-economic characteristics of islands should be compiled and assessed to assist in the planning process. Existing island databases should be expanded and geographic information systems developed and adapted to suit the special characteristics of islands.

(c) International and regional cooperation and coordination

17.131. Small island developing States, with the support, as appropriate, of international organizations, whether subregional, regional or global, should develop and strengthen inter-island, regional and interregional cooperation and information exchange, including periodic regional and global meetings on sustainable development of small island developing States, with the first global conference on the sustainable development of small island developing States to be held in 1993.

17.132. International organizations, whether subregional, regional or global, must recognize the special development requirements of small island developing States and give adequate priority in the provision of assistance, particularly with respect to the development and implementation of sustainable development plans.

Means of implementation

(a) Financing and cost evaluation

17.133. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $130 million, including about $50 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technical means

17.134. Centres for the development and diffusion of scientific information and advice on technical means and technologies appropriate to small island developing States, especially with reference to the management of the coastal zone, the exclusive economic zone and marine resources, should be established or strengthened, as appropriate, on a regional basis.

(c) Human resource development

17.135. Since populations of small island developing States cannot maintain all necessary specializations, training for integrated coastal management and development should aim to produce cadres of managers or scientists, engineers and coastal planners able to integrate the many factors that need to be considered in integrated coastal management. Resource users should be prepared to execute both management and protection functions and to apply the polluter pays principle and support the training of their personnel. Educational systems should be modified to meet these needs and special training programmes developed in integrated island management and development. Local planning should be integrated in educational curricula of all levels and public awareness campaigns developed with the assistance of non-governmental organizations and indigenous coastal populations.

(d) Capacity-building

17.136. The total capacity of small island developing States will always be limited. Existing capacity must therefore be restructured to meet efficiently the immediate needs for sustainable development and integrated management. At the same time, adequate and appropriate assistance from the international community must be directed at strengthening the full range of human resources needed on a continuous basis to implement sustainable development plans.

17.137. New technologies that can increase the output and range of capability of the limited human resources should be employed to increase the capacity of very small populations to meet their needs. The development and application of traditional knowledge to improve the capacity of countries to implement sustainable development should be fostered.

Notes

1/ References to the United Nations Convention on the Law of the Sea in this chapter of Agenda 21 do not prejudice the position of any State with respect to signature, ratification of or accession to the Convention.

2/ References to the United Nations Convention on the Law of the Sea in this chapter of Agenda 21 do not prejudice the position of States which view the Convention as having a unified character.

3/ Nothing in the programme areas of this chapter should be interpreted as prejudicing the rights of the States involved in a dispute of sovereignty or in the delimitation of the maritime areas concerned.

Chapter 18

PROTECTION OF THE QUALITY AND SUPPLY OF FRESHWATER RESOURCES: APPLICATION OF INTEGRATED APPROACHES TO THE DEVELOPMENT, MANAGEMENT AND USE OF WATER RESOURCES

INTRODUCTION

18.1. Freshwater resources are an essential component of the Earth's hydrosphere and an indispensable part of all terrestrial ecosystems. The freshwater environment is characterized by the hydrological cycle, including floods and droughts, which in some regions have become more extreme and dramatic in their consequences. Global climate change and atmospheric pollution could also have an impact on freshwater resources and their availability and, through sealevel rise, threaten low-lying coastal areas and small island ecosystems.

18.2. Water is needed in all aspects of life. The general objective is to make certain that adequate supplies of water of good quality are maintained for the entire population of this planet, while preserving the hydrological, biological and chemical functions of ecosystems, adapting human activities within the capacity limits of nature and combating vectors of water-related diseases. Innovative technologies, including the improvement of indigenous technologies, are needed to fully utilize limited water resources and to safeguard those resources against pollution.

18.3. The widespread scarcity, gradual destruction and aggravated pollution of freshwater resources in many world regions, along with the progressive encroachment of incompatible activities, demand integrated water resources planning and management. Such integration must cover all types of interrelated freshwater bodies, including both surface water and groundwater, and duly consider water quantity and quality aspects. The multisectoral nature of water resources development in the context of socio-economic development must be recognized, as well as the multi-interest utilization of water resources for water supply and sanitation, agriculture, industry, urban development, hydropower generation, inland fisheries, transportation, recreation, low and flat lands management and other activities. Rational water utilization schemes for the development of surface and underground water-supply sources and other potential sources have to be supported by concurrent water conservation and wastage minimization measures. Priority, however, must be accorded to flood prevention and control measures, as well as sedimentation control, where required.

18.4. Transboundary water resources and their use are of great importance to riparian States. In this connection, cooperation among those States may be desirable in conformity with existing agreements and/or other relevant arrangements, taking into account the interests of all riparian States concerned.

18.5. The following programme areas are proposed for the freshwater sector:

(a) Integrated water resources development and management;

(b) Water resources assessment;

(c) Protection of water resources, water quality and aquatic ecosystems;

(d) Drinking-water supply and sanitation;

(e) Water and sustainable urban development;

(f) Water for sustainable food production and rural development;

(g) Impacts of climate change on water resources.

PROGRAMME AREAS

A. Integrated water resources development and management

Basis for action

18.6. The extent to which water resources development contributes to economic productivity and social well-being is not usually appreciated, although all social and economic activities rely heavily on the supply and quality of freshwater. As populations and economic activities grow, many countries are rapidly reaching conditions of water scarcity or facing limits to economic development. Water demands are increasing rapidly, with 70-80 per cent required for irrigation, less than 20 per cent for industry and a mere 6 per cent for domestic consumption. The holistic management of freshwater as a finite and vulnerable resource, and the integration of sectoral water plans and programmes within the framework of national economic and social policy, are of paramount importance for action in the 1990s and beyond. The fragmentation of responsibilities for water resources development among sectoral agencies is proving, however, to be an even greater impediment to promoting integrated water management than had been anticipated. Effective implementation and coordination mechanisms are required.

Objectives

18.7. The overall objective is to satisfy the freshwater needs of all countries for their sustainable development.

18.8. Integrated water resources management is based on the perception of water as an integral part of the ecosystem, a natural resource and a social and economic good, whose quantity and quality determine the nature of its utilization. To this end, water resources have to be protected, taking into account the functioning of aquatic ecosystems and the perenniality of the resource, in order to satisfy and reconcile needs for water in human activities. In developing and using water resources, priority has to be given to the satisfaction of basic needs and the safeguarding of ecosystems. Beyond these requirements, however, water users should be charged appropriately.

18.9. Integrated water resources management, including the integration of land- and water-related aspects, should be carried out at the level of the catchment basin or sub-basin. Four principal objectives should be pursued, as follows:

(a) To promote a dynamic, interactive, iterative and multisectoral approach to water resources management, including the identification and protection of potential sources of freshwater supply, that integrates technological, socio-economic, environmental and human health considerations;

(b) To plan for the sustainable and rational utilization, protection, conservation and management of water resources based on community needs and priorities within the framework of national economic development policy;

(c) To design, implement and evaluate projects and programmes that are both economically efficient and socially appropriate within clearly defined strategies, based on an approach of full public participation, including that of women, youth, indigenous people and local communities in water management policy-making and decision-making;

(d) To identify and strengthen or develop, as required, in particular in developing countries, the appropriate institutional, legal and financial mechanisms to ensure that water policy and its implementation are a catalyst for sustainable social progress and economic growth.

18.10. In the case of transboundary water resources, there is a need for riparian States to formulate water resources strategies, prepare water resources action programmes and consider, where appropriate, the harmonization of those strategies and action programmes.

18.11. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including the United Nations and other relevant organizations as appropriate, could set the following targets:

(a) By the year 2000:

(i) To have designed and initiated, costed and targeted national action programmes, and to have put in place appropriate institutional structures and legal instruments;

(ii) To have established efficient water-use programmes to attain sustainable resource utilization patterns;

(b) By the year 2025:

To have achieved subsectoral targets of all freshwater programme areas.

It is understood that the fulfilment of the targets quantified in (i) and (ii) above will depend upon new and additional financial resources that will be made available to developing countries in accordance with the relevant provisions of General Assembly resolution 44/228.

Activities

18.12. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including the United Nations and other relevant organizations as appropriate, could implement the following activities to improve integrated water resources management:

(a) Formulation of costed and targeted national action plans and investment programmes;

(b) Integration of measures for the protection and conservation of potential sources of freshwater supply, including the inventorying of water resources, with land-use planning, forest resource utilization, protection of mountain slopes and riverbanks and other relevant development and conservation activities;

(c) Development of interactive databases, forecasting models, economic planning models and methods for water management and planning, including environmental impact assessment methods;

(d) Optimization of water resources allocation under physical and socio-economic constraints;

(e) Implementation of allocation decisions through demand management, pricing mechanisms and regulatory measures;

(f) Flood and drought management, including risk analysis and environmental and social impact assessment;

(g) Promotion of schemes for rational water use through public awareness-raising, educational programmes and levying of water tariffs and other economic instruments;

(h) Mobilization of water resources, particularly in arid and semi-arid areas;

(i) Promotion of international scientific research cooperation on freshwater resources;

(j) Development of new and alternative sources of water-supply such as sea-water desalination, artificial groundwater recharge, use of marginal-quality water, waste-water reuse and water recycling;

(k) Integration of water (including surface and underground water resources) quantity and quality management;

(l) Promotion of water conservation through improved water-use efficiency and wastage minimization schemes for all users, including the development of water-saving devices;

(m) Support to water-users groups to optimize local water resources management;

(n) Development of public participatory techniques and their implementation in decision-making, particularly the enhancement of the role of women in water resources planning and management;

(o) Development and strengthening, as appropriate, of cooperation, including mechanisms where appropriate, at all levels concerned, namely:

(i) At the lowest appropriate level, delegation of water resources management, generally, to such a level, in accordance with national legislation, including decentralization of government services to local authorities, private enterprises and communities;

(ii) At the national level, integrated water resources planning and management in the framework of the national planning process and, where appropriate, establishment of independent regulation and monitoring of freshwater, based on national legislation and economic measures;

(iii) At the regional level, consideration, where appropriate, of the harmonization of national strategies and action programmes;

(iv) At the global level, improved delineation of responsibilities, division of labour and coordination of international organizations and programmes, including facilitating discussions and sharing of experiences in areas related to water resources management;

(p) Dissemination of information, including operational guidelines, and promotion of education for water users, including the consideration by the United Nations of a World Water Day.

Means of implementation

(a) Financing and cost evaluation

18.13. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $115 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

18.14. The development of interactive databases, forecasting methods and economic planning models appropriate to the task of managing water resources in an efficient and sustainable manner will require the application of new techniques such as geographical information systems and expert systems to gather, assimilate, analyse and display multisectoral information and to optimize decision-making. In addition, the development of new and alternative sources of water-supply and low-cost water technologies will require innovative applied research. This will involve the transfer, adaptation and diffusion of new techniques and technology among developing countries, as well as the development of endogenous capacity, for the purpose of being able to deal with the added dimension of integrating engineering, economic, environmental and social aspects of water resources management and predicting the effects in terms of human impact.

18.15. Pursuant to the recognition of water as a social and economic good, the various available options for charging water users (including domestic, urban, industrial and agricultural water-user groups) have to be further evaluated and field-tested. Further development is required for economic instruments that take into account opportunity costs and environmental externalities. Field studies on the willingness to pay should be conducted in rural and urban situations.

18.16. Water resources development and management should be planned in an integrated manner, taking into account long-term planning needs as well as those with narrower horizons, that is to say, they should incorporate environmental, economic and social considerations based on the principle of sustainability; include the requirements of all users as well as those relating to the prevention and mitigation of water-related hazards; and constitute an integral part of the socio-economic development planning process. A prerequisite for the sustainable management of water as a scarce vulnerable resource is the obligation to acknowledge in all planning and development its full costs. Planning considerations should reflect benefits investment, environmental protection and operation costs, as well as the opportunity costs reflecting the most valuable alternative use of water. Actual charging need not necessarily burden all beneficiaries with the consequences of those considerations. Charging mechanisms should, however, reflect as far as possible both the true cost of water when used as an economic good and the ability of the communities to pay.

18.17. The role of water as a social, economic and life-sustaining good should be reflected in demand management mechanisms and implemented through water conservation and reuse, resource assessment and financial instruments.

18.18. The setting afresh of priorities for private and public investment strategies should take into account (a) maximum utilization of existing projects, through maintenance, rehabilitation and optimal operation; (b) new or alternative clean technologies; and (c) environmentally and socially benign hydropower.

(c) Human resources development

18.19. The delegation of water resources management to the lowest appropriate level necessitates educating and training water management staff at all levels and ensuring that women participate equally in the education and training programmes. Particular emphasis has to be placed on the introduction of public participatory techniques, including enhancement of the role of women, youth, indigenous people and local communities. Skills related to various water management functions have to be developed by municipal government and water authorities, as well as in the private sector, local/national non-governmental organizations, cooperatives, corporations and other water-user groups. Education of the public regarding the importance of water and its proper management is also needed.

18.20. To implement these principles, communities need to have adequate capacities. Those who establish the framework for water development and management at any level, whether international, national or local, need to ensure that the means exist to build those capacities. The means will vary from case to case. They usually include:

(a) Awareness-creation programmes, including mobilizing commitment and support at all levels and initiating global and local action to promote such programmes;

(b) Training of water managers at all levels so that they have an appropriate understanding of all the elements necessary for their decision-making;

(c) Strengthening of training capacities in developing countries;

(d) Appropriate training of the necessary professionals, including extension workers;

(e) Improvement of career structures;

(f) Sharing of appropriate knowledge and technology, both for the collection of data and for the implementation of planned development including non-polluting technologies and the knowledge needed to extract the best performance from the existing investment system.

(d) Capacity-building

18.21. Institutional capacity for implementing integrated water management should be reviewed and developed when there is a clear demand. Existing administrative structures will often be quite capable of achieving local water resources management, but the need may arise for new institutions based upon the perspective, for example, of river catchment areas, district development councils and local community committees. Although water is managed at various levels in the socio-political system, demand-driven management requires the development of water-related institutions at appropriate levels, taking into account the need for integration with land-use management.

18.22. In creating the enabling environment for lowest-appropriate-level management, the role of Government includes mobilization of financial and human resources, legislation, standard-setting and other regulatory functions, monitoring and assessment of the use of water and land resources, and creating of opportunities for public participation. International agencies and donors have an important role to play in providing support to developing countries in creating the required enabling environment for integrated water resources management. This should include, as appropriate, donor support to local levels in developing countries, including community-based institutions, non-governmental organizations and women's groups.

B. Water resources assessment

Basis for action

18.23. Water resources assessment, including the identification of potential sources of freshwater supply, comprises the continuing determination of sources, extent, dependability and quality of water resources and of the human activities that affect those resources. Such assessment constitutes the practical basis for their sustainable management and a prerequisite for evaluation of the possibilities for their development. There is, however, growing concern that at a time when more precise and reliable information is needed about water resources, hydrologic services and related bodies are less able than before to provide this information, especially information on groundwater and water quality. Major impediments are the lack of financial resources for water resources assessment, the fragmented nature of hydrologic services and the insufficient numbers of qualified staff. At the same time, the advancing technology for data capture and management is increasingly difficult to access for developing countries. Establishment of national databases is, however, vital to water resources assessment and to mitigation of the effects of floods, droughts, desertification and pollution.

Objectives

18.24. Based upon the Mar del Plata Action Plan, this programme area has been extended into the 1990s and beyond with the overall objective of ensuring the assessment and forecasting of the quantity and quality of water resources, in order to estimate the total quantity of water resources available and their future supply potential, to determine their current quality status, to predict possible conflicts between supply and demand and to provide a scientific database for rational water resources utilization.

18.25. Five specific objectives have been set accordingly, as follows:

(a) To make available to all countries water resources assessment technology that is appropriate to their needs, irrespective of their level of development, including methods for the impact assessment of climate change on freshwaters;

(b) To have all countries, according to their financial means, allocate to water resources assessment financial resources in line with the economic and social needs for water resources data;

(c) To ensure that the assessment information is fully utilized in the development of water management policies;

(d) To have all countries establish the institutional arrangements needed to ensure the efficient collection, processing, storage, retrieval and dissemination to users of information about the quality and quantity of available water resources at the level of catchments and groundwater aquifers in an integrated manner;

(e) To have sufficient numbers of appropriately qualified and capable staff recruited and retained by water resources assessment agencies and provided with the training and retraining they will need to carry out their responsibilities successfully.

18.26. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including cooperation with the United Nations and other relevant organizations, as appropriate, could set the following targets:

(a) By the year 2000, to have studied in detail the feasibility of installing water resources assessment services;

(b) As a long-term target, to have fully operational services available based upon high-density hydrometric networks.

Activities

18.27. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including the United Nations and other relevant organizations as appropriate, could undertake the following activities:

(a) Institutional framework:

(i) Establish appropriate policy frameworks and national priorities;

(ii) Establish and strengthen the institutional capabilities of countries, including legislative and regulatory arrangements, that are required to ensure the adequate assessment of their water resources and the provision of flood and drought forecasting services;

(iii) Establish and maintain effective cooperation at the national level between the various agencies responsible for the collection, storage and analysis of hydrologic data;

(iv) Cooperate in the assessment of transboundary water resources, subject to the prior agreement of each riparian State concerned;

(b) Data systems:

(i) Review existing data-collection networks and assess their adequacy, including those that provide real-time data for flood and drought forecasting;

(ii) Improve networks to meet accepted guidelines for the provision of data on water quantity and quality for surface and groundwater, as well as relevant land-use data;

(iii) Apply standards and other means to ensure data compatibility;

(iv) Upgrade facilities and procedures used to store, process and analyse hydrologic data and make such data and the forecasts derived from them available to potential users;

(v) Establish databases on the availability of all types of hydrologic data at the national level;

(vi) Implement "data rescue" operations, for example, establishment of national archives of water resources;

(vii) Implement appropriate well-tried techniques for the processing of hydrologic data;

(viii) Derive area-related estimates from point hydrologic data;

(ix) Assimilate remotely sensed data and the use, where appropriate, of geographical information systems;

(c) Data dissemination:

(i) Identify the need for water resources data for various planning purposes;

(ii) Analyse and present data and information on water resources in the forms required for planning and management of countries' socio-economic development and for use in environmental protection strategies and in the design and operation of specific water-related projects;

(iii) Provide forecasts and warnings of flood and drought to the general public and civil defence;

(d) Research and development:

(i) Establish or strengthen research and development programmes at the national, subregional, regional and international levels in support of water resources assessment activities;

(ii) Monitor research and development activities to ensure that they make full use of local expertise and other local resources and that they are appropriate for the needs of the country or countries concerned.

Means of implementation

(a) Financing and cost evaluation

18.28. The Conference secretariat has estimated the everage total annual cost (1993-2000) of implementing the activities of this programme to be about $355 million, including about $145 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

18.29. Important research needs include (a) development of global hydrologic models in support of analysis of climate change impact and of macroscale water resources assessment; (b) closing of the gap between terrestrial hydrology and ecology at different scales, including the critical water-related processes behind loss of vegetation and land degradation and its restoration; and (c) study of the key processes in water-quality genesis, closing the gap between hydrologic flows and biogeochemical processes. The research models should build upon hydrologic balance studies and also include the consumptive use of water. This approach should also, when appropriate, be applied at the catchment level.

18.30. Water resources assessment necessitates the strengthening of existing systems for technology transfer, adaptation and diffusion, and the development of new technology for use under field conditions, as well as the development of endogenous capacity. Prior to inaugurating the above activities, it is necessary to prepare catalogues of the water resources information held by government services, the private sector, educational institutes, consultants, local water-use organizations and others.

(c) Human resource development

18.31. Water resources assessment requires the establishment and maintenance of a body of well-trained and motivated staff sufficient in number to undertake the above activities. Education and training programmes designed to ensure an adequate supply of these trained personnel should be established or strengthened at the local, national, subregional or regional level. In addition, the provision of attractive terms of employment and career paths for professional and technical staff should be encouraged. Human resource needs should be monitored periodically, including all levels of employment. Plans have to be established to meet those needs through education and training opportunities and international programmes of courses and conferences.

18.32. Because well-trained people are particularly important to water resources assessment and hydrologic forecasting, personnel matters should receive special attention in this area. The aim should be to attract and retain personnel to work on water resources assessment who are sufficient in number and adequate in their level of education to ensure the effective implementation of the activities that are planned. Education may be called for at both the national and the international level, with adequate terms of employment being a national responsibility.

18.33. Recommended actions include:

(a) Identifying education and training needs geared to the specific requirements of countries;

(b) Establishing and strengthening education and training programmes on water-related topics, within an environmental and developmental context, for all categories of staff involved in water resources assessment activities, using advanced educational technology, where appropriate, and involving both men and women;

(c) Developing sound recruitment, personnel and pay policies for staff of national and local water agencies.

(d) Capacity-building

18.34. The conduct of water resources assessment on the basis of operational national hydrometric networks requires an enabling environment at all levels. The following national support action is necessary for enhanced national capacities:

(a) Review of the legislative and regulatory basis of water resources assessment;

(b) Facilitation of close collaboration among water sector agencies, particularly between information producers and users;

(c) Implementation of water management policies based upon realistic appraisals of water resources conditions and trends;

(d) Strengthening of the managerial capabilities of water-user groups, including women, youth, indigenous people and local communities, to improve water-use efficiency at the local level.

C. Protection of water resources, water quality and aquatic ecosystems

Basis for action

18.35. Freshwater is a unitary resource. Long-term development of global freshwater requires holistic management of resources and a recognition of the interconnectedness of the elements related to freshwater and freshwater quality. There are few regions of the world that are still exempt from problems of loss of potential sources of freshwater supply, degraded water quality and pollution of surface and groundwater sources. Major problems affecting the water quality of rivers and lakes arise, in variable order of importance according to different situations, from inadequately treated domestic sewage, inadequate controls on the discharges of industrial waste waters, loss and destruction of catchment areas, ill-considered siting of industrial plants, deforestation, uncontrolled shifting cultivation and poor agricultural practices. This gives rise to the leaching of nutrients and pesticides. Aquatic ecosystems are disturbed and living freshwater resources are threatened. Under certain circumstances, aquatic ecosystems are also affected by agricultural water resource development projects such as dams, river diversions, water installations and irrigation schemes. Erosion, sedimentation, deforestation and desertification have led to increased land degradation, and the creation of reservoirs has, in some cases, resulted in adverse effects on ecosystems. Many of these problems have arisen from a development model that is environmentally destructive and from a lack of public awareness and education about surface and groundwater resource protection. Ecological and human health effects are the measurable consequences, although the means to monitor them are inadequate or non-existent in many countries. There is a widespread lack of perception of the linkages between the development, management, use and treatment of water resources and aquatic ecosystems. A preventive approach, where appropriate, is crucial to the avoiding of costly subsequent measures to rehabilitate, treat and develop new water supplies.

Objectives

18.36. The complex interconnectedness of freshwater systems demands that freshwater management be holistic (taking a catchment management approach) and based on a balanced consideration of the needs of people and the environment. The Mar del Plata Action Plan has already recognized the intrinsic linkage between water resource development projects and their significant physical, chemical, biological, health and socio-economic repercussions. The overall environmental health objective was set as follows: "to evaluate the consequences which the various users of water have on the environment, to support measures aimed at controlling water-related diseases, and to protect ecosystems". 1/

18.37. The extent and severity of contamination of unsaturated zones and aquifers have long been underestimated owing to the relative inaccessibility of aquifers and the lack of reliable information on aquifer systems. The protection of groundwater is therefore an essential element of water resource management.

18.38. Three objectives will have to be pursued concurrently to integrate water-quality elements into water resource management:

(a) Maintenance of ecosystem integrity, according to a management principle of preserving aquatic ecosystems, including living resources, and of effectively protecting them from any form of degradation on a drainage basin basis;

(b) Public health protection, a task requiring not only the provision of safe drinking-water but also the control of disease vectors in the aquatic environment;

(c) Human resources development, a key to capacity-building and a prerequisite for implementing water-quality management.

18.39. All States, according to their capacity and available resources, through bilateral or multilateral cooperation, including the United Nations and other relevant organizations as appropriate, could set the following targets:

(a) To identify the surface and groundwater resources that could be developed for use on a sustainable basis and other major developable water-dependent resources and, simultaneously, to initiate programmes for the protection, conservation and rational use of these resources on a sustainable basis;

(b) To identify all potential sources of water-supply and prepared outlines for their protection, conservation and rational use;

(c) To initiate effective water pollution prevention and control programmes, based on an appropriate mixture of pollution reduction-at-source strategies, environmental impact assessments and enforceable standards for major point-source discharges and high-risk non-point sources, commensurate with their socio-economic development;

(d) To participate, as far as appropriate, in international water-quality monitoring and management programmes such as the Global Water Quality Monitoring Programme (GEMS/WATER), the UNEP Environmentally Sound Management of Inland Waters (EMINWA), the FAO regional inland fishery bodies, and the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention);

(e) To reduce the prevalence of water-associated diseases, starting with the eradication of dracunculiasis (guinea worm disease) and onchocerciasis (river blindness) by the year 2000;

(f) To establish, according to capacities and needs, biological, health, physical and chemical quality criteria for all water bodies (surface and groundwater), with a view to an ongoing improvement of water quality;

(g) To adopt an integrated approach to environmentally sustainable management of water resources, including the protection of aquatic ecosystems and freshwater living resources;

(h) To put in place strategies for the environmentally sound management of freshwaters and related coastal ecosystems, including consideration of fisheries, aquaculture, animal grazing, agricultural activities and biodiversity.

Activities

18.40. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including United Nations and other relevant organizations as appropriate, could implement the following activities:

(a) Water resources protection and conservation:

(i) Establishment and strengthening of technical and institutional capacities to identify and protect potential sources of water-supply within all sectors of society;

(ii) Identification of potential sources of water-supply and preparation of national profiles;

(iii) Preparation of national plans for water resources protection and conservation;

(iv) Rehabilitation of important, but degraded, catchment areas, particularly on small islands;

(v) Strengthening of administrative and legislative measures to prevent encroachment on existing and potentially usable catchment areas;

(b) Water pollution prevention and control:

(i) Application of the "polluter pays" principle, where appropriate, to all kinds of sources, including on-site and off-site sanitation;

(ii) Promotion of the construction of treatment facilities for domestic sewage and industrial effluents and the development of appropriate technologies, taking into account sound traditional and indigenous practices;

(iii) Establishment of standards for the discharge of effluents and for the receiving waters;

(iv) Introduction of the precautionary approach in water-quality management, where appropriate, with a focus on pollution minimization and prevention through use of new technologies, product and process change, pollution reduction at source and effluent reuse, recycling and recovery, treatment and environmentally safe disposal;

(v) Mandatory environmental impact assessment of all major water resource development projects potentially impairing water quality and aquatic ecosystems, combined with the delineation of appropriate remedial measures and a strengthened control of new industrial installations, solid waste landfills and infrastructure development projects;

(vi) Use of risk assessment and risk management in reaching decisions in this area and ensuring compliance with those decisions;

(vii) Identification and application of best environmental practices at reasonable cost to avoid diffuse pollution, namely, through a limited, rational and planned use of nitrogenous fertilizers and other agrochemicals (pesticides, herbicides) in agricultural practices;

(viii) Encouragement and promotion of the use of adequately treated and purified waste waters in agriculture, aquaculture, industry and other sectors;

(c) Development and application of clean technology:

(i) Control of industrial waste discharges, including low-waste production technologies and water recirculation, in an integrated manner and through application of precautionary measures derived from a broad-based life-cycle analysis;

(ii) Treatment of municipal waste water for safe reuse in agriculture and aquaculture;

(iii) Development of biotechnology, inter alia, for waste treatment, production of biofertilizers and other activities;

(iv) Development of appropriate methods for water pollution control, taking into account sound traditional and indigenous practices;

(d) Groundwater protection:

(i) Development of agricultural practices that do not degrade groundwaters;

(ii) Application of the necessary measures to mitigate saline intrusion into aquifers of small islands and coastal plains as a consequence of sealevel rise or overexploitation of coastal aquifers;

(iii) Prevention of aquifer pollution through the regulation of toxic substances that permeate the ground and the establishment of protection zones in groundwater recharge and abstraction areas;

(iv) Design and management of landfills based upon sound hydrogeologic information and impact assessment, using the best practicable and best available technology;

(v) Promotion of measures to improve the safety and integrity of wells and well-head areas to reduce intrusion of biological pathogens and hazardous chemicals into aquifers at well sites;

(vi) Water-quality monitoring, as needed, of surface and groundwaters potentially affected by sites storing toxic and hazardous materials;

(e) Protection of aquatic ecosystems:

(i) Rehabilitation of polluted and degraded water bodies to restore aquatic habitats and ecosystems;

(ii) Rehabilitation programmes for agricultural lands and for other users, taking into account equivalent action for the protection and use of groundwater resources important for agricultural productivity and for the biodiversity of the tropics;

(iii) Conservation and protection of wetlands (owing to their ecological and habitat importance for many species), taking into account social and economic factors;

(iv) Control of noxious aquatic species that may destroy some other water species;

(f) Protection of freshwater living resources:

(i) Control and monitoring of water quality to allow for the sustainable development of inland fisheries;

(ii) Protection of ecosystems from pollution and degradation for the development of freshwater aquaculture projects;

(g) Monitoring and surveillance of water resources and waters receiving wastes:

(i) Establishment of networks for the monitoring and continuous surveillance of waters receiving wastes and of point and diffuse sources of pollution;

(ii) Promotion and extension of the application of environmental impact assessments of geographical information systems;

(iii) Surveillance of pollution sources to improve compliance with standards and regulations and to regulate the issue of discharge permits;

(iv) Monitoring of the utilization of chemicals in agriculture that may have an adverse environmental effect;

(v) Rational land use to prevent land degradation, erosion and siltation of lakes and other water bodies;

(h) Development of national and international legal instruments that may be required to protect the quality of water resources, as appropriate, particularly for:

(i) Monitoring and control of pollution and its effects in national and transboundary waters;

(ii) Control of long-range atmospheric transport of pollutants;

(iii) Control of accidental and/or deliberate spills in national and/or transboundary water bodies;

(iv) Environmental impact assessment.

Means of implementation

(a) Financing and cost evaluation

18.41. The Conference secretariat has estimated the average total cost (1993-2000) of implementing the activities of this programme to be about $1 billion, including about $340 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

18.42. States should undertake cooperative research projects to develop solutions to technical problems that are appropriate for the conditions in each watershed or country. States should consider strengthening and developing national research centres linked through networks and supported by regional water research institutes. The North-South twinning of research centres and field studies by international water research institutions should be actively promoted. It is important that a minimum percentage of funds for water resource development projects is allocated to research and development, particularly in externally funded projects.

18.43. Monitoring and assessment of complex aquatic systems often require multidisciplinary studies involving several institutions and scientists in a joint programme. International water-quality programmes, such as GEMS/WATER, should be oriented towards the water-quality of developing countries. User-friendly software and Geographical Information Systems (GIS) and Global Resource Information Database (GRID) methods should be developed for the handling, analysis and interpretation of monitoring data and for the preparation of management strategies.

(c) Human resource development

18.44. Innovative approaches should be adopted for professional and managerial staff training in order to cope with changing needs and challenges. Flexibility and adaptability regarding emerging water pollution issues should be developed. Training activities should be undertaken periodically at all levels within the organizations responsible for water-quality management and innovative teaching techniques adopted for specific aspects of water-quality monitoring and control, including development of training skills, in-service training, problem-solving workshops and refresher training courses.

18.45. Suitable approaches include the strengthening and improvement of the human resource capabilities of local Governments in managing water protection, treatment and use, particularly in urban areas, and the establishment of national and regional technical and engineering courses on the subjects of water-quality protection and control at existing schools and education/training courses on water resources protection and conservation for laboratory and field technicians, women and other water-user groups.

(d) Capacity-building

18.46. The effective protection of water resources and ecosystems from pollution requires considerable upgrading of most countries' present capacities. Water-quality management programmes require a certain minimum infrastructure and staff to identify and implement technical solutions and to enforce regulatory action. One of the key problems today and for the future is the sustained operation and maintenance of these facilities. In order not to allow resources gained from previous investments to deteriorate further, immediate action is required in a number of areas.

D. Drinking-water supply and sanitation

Basis for action

18.47. Safe water-supplies and environmental sanitation are vital for protecting the environment, improving health and alleviating poverty. Safe water is also crucial to many traditional and cultural activities. An estimated 80 per cent of all diseases and over one third of deaths in developing countries are caused by the consumption of contaminated water, and on average as much as one tenth of each person's productive time is sacrificed to water-related diseases. Concerted efforts during the 1980s brought water and sanitation services to hundreds of millions of the world's poorest people. The most outstanding of these efforts was the launching in 1981 of the International Drinking Water Supply and Sanitation Decade, which resulted from the Mar del Plata Action Plan adopted by the United Nations Water Conference in 1977. The commonly agreed premise was that "all peoples, whatever their stage of development and their social and economic conditions, have the right to have access to drinking water in quantities and of a quality equal to their basic needs". 2/ The target of the Decade was to provide safe drinking-water and sanitation to underserved urban and rural areas by 1990, but even the unprecedented progress achieved during the Decade was not enough. One in three people in the developing world still lacks these two most basic requirements for health and dignity. It is also recognized that human excreta and sewage are important causes of the deterioration of water-quality in developing countries, and the introduction of available technologies, including appropriate technologies, and the construction of sewage treatment facilities could bring significant improvement.

Objectives

18.48. The New Delhi Statement (adopted at the Global Consultation on Safe Water and Sanitation for the 1990s, which was held in New Delhi from 10 to 14 September 1990) formalized the need to provide, on a sustainable basis, access to safe water in sufficient quantities and proper sanitation for all, emphasizing the "some for all rather than more for some" approach. Four guiding principles provide for the programme objectives:

(a) Protection of the environment and safeguarding of health through the integrated management of water resources and liquid and solid wastes;

(b) Institutional reforms promoting an integrated approach and including changes in procedures, attitudes and behaviour, and the full participation of women at all levels in sector institutions;

(c) Community management of services, backed by measures to strengthen local institutions in implementing and sustaining water and sanitation programmes;

(d) Sound financial practices, achieved through better management of existing assets, and widespread use of appropriate technologies.

18.49. Past experience has shown that specific targets should be set by each individual country. At the World Summit for Children, in September 1990, heads of State or Government called for both universal access to water-supply and sanitation and the eradication of guinea worm disease by 1995. Even for the more realistic target of achieving full coverage in water-supply by 2025, it is estimated that annual investments must reach double the current levels. One realistic strategy to meet present and future needs, therefore, is to develop lower-cost but adequate services that can be implemented and sustained at the community level.

Activities

18.50. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including the United Nations and other relevant organizations as appropriate, could implement the following activities:

(a) Environment and health:

(i) Establishment of protected areas for sources of drinking-water supply;

(ii) Sanitary disposal of excreta and sewage, using appropriate systems to treat waste waters in urban and rural areas;

(iii) Expansion of urban and rural water-supply and development and expansion of rainwater catchment systems, particularly on small islands, in addition to the reticulated water-supply system;

(iv) Building and expansion, where appropriate, of sewage treatment facilities and drainage systems;

(v) Treatment and safe reuse of domestic and industrial waste waters in urban and rural areas;

(vi) Control of water-associated diseases;

(b) People and institutions:

(i) Strengthening of the functioning of Governments in water resources management and, at the same time, giving of full recognition to the role of local authorities;

(ii) Encouragement of water development and management based on a participatory approach, involving users, planners and policy makers at all levels;

(iii) Application of the principle that decisions are to be taken at the lowest appropriate level, with public consultation and involvement of users in the planning and implementation of water projects;

(iv) Human resource development at all levels, including special programmes for women;

(v) Broad-based education programmes, with particular emphasis on hygiene, local management and risk reduction;

(vi) International support mechanisms for programme funding, implementation and follow-up;

(c) National and community management:

(i) Support and assistance to communities in managing their own systems on a sustainable basis;

(ii) Encouragement of the local population, especially women, youth, indigenous people and local communities, in water management;

(iii) Linkages between national water plans and community management of local waters;

(iv) Integration of community management of water within the context of overall planning;

(v) Promotion of primary health and environmental care at the local level, including training for local communities in appropriate water management techniques and primary health care;

(vi) Assistance to service agencies in becoming more cost-effective and responsive to consumer needs;

(vii) Providing of more attention to underserved rural and low-income periurban areas;

(viii) Rehabilitation of defective systems, reduction of wastage and safe reuse of water and waste water;

(ix) Programmes for rational water use and ensured operation and maintenance;

(x) Research and development of appropriate technical solutions;

(xi) Substantially increase urban treatment capacity commensurate with increasing loads;

(d) Awareness creation and public information/participation:

(i) Strengthening of sector monitoring and information management at subnational and national levels;

(ii) Annual processing, analysis and publication of monitoring results at national and local levels as a sector management and advocacy/awareness creation tool;

(iii) Use of limited sector indicators at regional and global levels to promote the sector and raise funds;

(iv) Improvement of sector coordination, planning and implementation, with the assistance of improved monitoring and information management, to increase the sector's absorptive capacity, particularly in community-based self-help projects.

Means of implementation

(a) Financing and cost evaluation

18.51. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $20 billion, including about $7.4 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

18.52. To ensure the feasibility, acceptability and sustainability of planned water-supply services, adopted technologies should be responsive to the needs and constraints imposed by the conditions of the community concerned. Thus, design criteria will involve technical, health, social, economic, provincial, institutional and environmental factors that determine the characteristics, magnitude and cost of the planned system. Relevant international support programmes should address the developing countries concerning, *inter alia*:

(a) Pursuit of low-cost scientific and technological means, as far as practicable;

(b) Utilization of traditional and indigenous practices, as far as practicable, to maximize and sustain local involvement;

(c) Assistance to country-level technical/scientific institutes to facilitate curricula development to support fields critical to the water and sanitation sector.

(c) Human resource development

18.53. To effectively plan and manage water-supply and sanitation at the national, provincial, district and community level, and to utilize funds most effectively, trained professional and technical staff must be developed within each country in sufficient numbers. To do this, countries must establish manpower development plans, taking into consideration present requirements and planned developments. Subsequently, the development and performance of country-level training institutions should be enhanced so that they can play a pivotal role in capacity-building. It is also important that countries provide adequate training for women in the sustainable maintenance of equipment, water resources management and environmental sanitation.

(d) Capacity-building

18.54. The implementation of water-supply and sanitation programmes is a national responsibility. To varying degrees, responsibility for the implementation of projects and the operating of systems should be delegated to all administrative levels down to the community and individual served. This also means that national authorities, together with the agencies and bodies of the United Nations system and other external support agencies providing support to national programmes, should develop mechanisms and procedures to collaborate at all levels. This is particularly important if full advantage is to be taken of community-based approaches and self-reliance as tools for sustainability. This will entail a high degree of community participation, involving women, in the conception, planning, decision-making, implementation and evaluation connected with projects for domestic water-supply and sanitation.

18.55. Overall national capacity-building at all administrative levels, involving institutional development, coordination, human resources, community participation, health and hygiene education and literacy, has to be developed according to its fundamental connection both with any efforts to improve health and socio-economic development through water-supply and sanitation and with their impact on the human environment. Capacity-building should therefore be one of the underlying keys in implementation strategies. Institutional capacity-building should be considered to have an importance equal to that of the sector supplies and equipment component so that funds can be directed to both. This can be undertaken at the planning or programme/project formulation stage, accompanied by a clear definition of objectives and targets. In this regard, technical cooperation among developing countries, owing to their available wealth of information and experience and the need to avoid "reinventing the wheel", is crucial. Such a course has proved cost-effective in many country projects already.

E. Water and sustainable urban development

Basis for action

18.56. Early in the next century, more than half of the world's population will be living in urban areas. By the year 2025, that proportion will have risen to 60 per cent, comprising some 5 billion people. Rapid urban population growth and industrialization are putting severe strains on the water resources and environmental protection capabilities of many cities. Special attention needs to be given to the growing effects of urbanization on water demands and usage and to the critical role played by local and municipal authorities in managing the supply, use and overall treatment of water, particularly in developing countries for which special support is needed. Scarcity of freshwater resources and the escalating costs of developing new resources have a considerable impact on national industrial, agricultural and human settlement development and economic growth. Better management of urban water resources, including the elimination of unsustainable consumption patterns, can make a substantial contribution to the alleviation of poverty and improvement of the health and quality of life of the urban and rural poor. A high proportion of large urban agglomerations are located around estuaries and in coastal zones. Such an arrangement leads to pollution from municipal and industrial discharges combined with overexploitation of available water resources and threatens the marine environment and the supply of freshwater resources.

Objectives

18.57. The development objective of this programme is to support local and central Governments' efforts and capacities to sustain national development and productivity through environmentally sound management of water resources for urban use. Supporting this objective is the identification and implementation of strategies and actions to ensure the continued supply of affordable water for present and future needs and to reverse current trends of resource degradation and depletion.

18.58. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including the United Nations and other relevant organizations as appropriate, could set the following targets:

(a) By the year 2000, to have ensured that all urban residents have access to at least 40 litres per capita per day of safe water and that 75 per cent of the urban population are provided with on-site or community facilities for sanitation;

(b) By the year 2000, to have established and applied quantitative and qualitative discharge standards for municipal and industrial effluents;

(c) By the year 2000, to have ensured that 75 per cent of solid waste generated in urban areas are collected and recycled or disposed of in an environmentally safe way.

Activities

18.59. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including the United Nations and other relevant organizations as appropriate, could implement the following activities:

(a) Protection of water resources from depletion, pollution and degradation:

- (i) Introduction of sanitary waste disposal facilities based on environmentally sound low-cost and upgradable technologies;
- (ii) Implementation of urban storm-water run-off and drainage programmes;
- (iii) Promotion of recycling and reuse of waste water and solid wastes;
- (iv) Control of industrial pollution sources to protect water resources;

(v) Protection of watersheds with respect to depletion and degradation of their forest cover and from harmful upstream activities;

(vi) Promotion of research into the contribution of forests to sustainable water resources development;

(vii) Encouragement of the best management practices for the use of agrochemicals with a view to minimizing their impact on water resources;

(b) Efficient and equitable allocation of water resources:

(i) Reconciliation of city development planning with the availability and sustainability of water resources;

(ii) Satisfaction of the basic water needs of the urban population;

(iii) Introduction of water tariffs, taking into account the circumstances in each country and where affordable, that reflect the marginal and opportunity cost of water, especially for productive activities;

(c) Institutional/legal/management reforms:

(i) Adoption of a city-wide approach to the management of water resources;

(ii) Promotion at the national and local level of the elaboration of land-use plans that give due consideration to water resources development;

(iii) Utilization of the skills and potential of non-governmental organizations, the private sector and local people, taking into account the public's and strategic interests in water resources;

(d) Promotion of public participation:

(i) Initiation of public-awareness campaigns to encourage the public's move towards rational water utilization;

(ii) Sensitization of the public to the issue of protecting water quality within the urban environment;

(iii) Promotion of public participation in the collection, recycling and elimination of wastes;

(e) Support to local capacity-building:

(i) Development of legislation and policies to promote investments in urban water and waste management, reflecting the major contribution of cities to national economic development;

(ii) Provision of seed money and technical support to the local handling of materials supply and services;

(iii) Encouragement, to the extent possible, of autonomy and financial viability of city water, solid waste and sewerage utilities;

(iv) Creation and maintenance of a cadre of professionals and semi-professionals, for water, waste-water and solid waste management;

(f) Provision of enhanced access to sanitary services:

(i) Implementation of water, sanitation and waste management programmes focused on the urban poor;

(ii) Making available of low-cost water-supply and sanitation technology choices;

(iii) Basing of choice of technology and service levels on user preferences and willingness to pay;

(iv) Mobilization and facilitation of the active involvement of women in water management teams;

(v) Encouragement and equipment of local water associations and water committees to manage community water-supply systems and communal latrines, with technical back-up available when required;

(vi) Consideration of the merits and practicality of rehabilitating existing malfunctioning systems and of correcting operation and maintenance inadequacies.

Means of implementation

(a) Financing and cost evaluation

18.60. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $20 billion, including about $4.5 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

18.61. The 1980s saw considerable progress in the development and application of low-cost water-supply and sanitation technologies. The programme envisages continuation of this work, with particular emphasis on development of appropriate sanitation and waste disposal technologies for low-income high-density urban settlements. There should also be international information exchange, to ensure a widespread recognition among sector professionals of the availability and benefits of appropriate low-cost technologies. The public-awareness campaigns will also include components to overcome user resistance to second-class services by emphasizing the benefits of reliability and sustainability.

(c) Human resource development

18.62. Implicit in virtually all elements of this programme is the need for progressive enhancement of the training and career development of personnel at all levels in sector institutions. Specific programme activities will involve the training and retention of staff with skills in community involvement, low-cost technology, financial management, and integrated planning of urban water resources management. Special provision should be made for mobilizing and facilitating the active participation of women, youth, indigenous people and local communities in water management teams and for supporting the development of water associations and water committees, with appropriate training of such personnel as treasurers, secretaries and caretakers. Special education and training programmes for women should be launched with regard to the protection of water resources and water-quality within urban areas.

(d) Capacity-building

18.63. In combination with human resource development, strengthening of institutional, legislative and management structures are key elements of the programme. A prerequisite for progress in enhancing access to water and sanitation services is the establishment of an institutional framework that ensures that the real needs and potential contributions of currently unserved populations are reflected in urban development planning. The multisectoral approach, which is a vital part of urban water resources management, requires institutional linkages at the national and city levels, and the programme includes proposals for establishing intersectoral planning groups. Proposals for greater pollution control and prevention depend for their success on the right combination of economic and regulatory mechanisms, backed by adequate monitoring and surveillance and supported by enhanced capacity to address environmental issues on the part of local Governments.

18.64. Establishment of appropriate design standards, water-quality objectives and discharge consents is therefore among the proposed activities. The programme also includes support for strengthening the capability of water and sewerage agencies and for developing their autonomy and financial viability. Operation and maintenance of existing water and sanitation facilities have been recognized as entailing a serious shortcoming in many countries. Technical and financial support are needed to help countries correct present inadequacies and build up the capacity to operate and maintain rehabilitated and new systems.

F. Water for sustainable food production and rural development

Basis for action

18.65. Sustainability of food production increasingly depends on sound and efficient water use and conservation practices consisting primarily of irrigation development and management, including water management with respect to rain-fed areas, livestock water-supply, inland fisheries and agro-forestry. Achieving food security is a high priority in many countries, and agriculture must not only provide food for rising populations, but also save water for other uses. The challenge is to develop and apply water-saving technology and management methods and, through capacity-building, enable communities to introduce institutions and incentives for the rural population to adopt new approaches, for both rain-fed and irrigated agriculture. The rural population must also have better access to a potable water-supply and to sanitation services. It is an immense task but not an impossible one, provided appropriate policies and programmes are adopted at all levels - local, national and international. While significant expansion of the area under rain-fed agriculture has been achieved during the past decade, the productivity response and sustainability of irrigation systems have been constrained by problems of waterlogging and salinization. Financial and market constraints are also a common problem. Soil erosion, mismanagement and overexploitation of natural resources and acute competition for water have all influenced the extent of poverty, hunger and famine in the developing countries. Soil erosion caused by overgrazing of livestock is also often responsible for the siltation of lakes. Most often, the development of irrigation schemes is supported neither by environmental impact assessments identifying hydrologic consequences within watersheds of interbasin transfers, nor by the assessment of social impacts on peoples in river valleys.

18.66. The non-availability of water-supplies of suitable quality is a significant limiting factor to livestock production in many countries, and improper disposal of animal wastes can in certain circumstances result in pollution of water-supplies for both humans and animals. The drinking-water requirements of livestock vary according to species and the environment in which they are kept. It is estimated that the current global livestock drinking-water requirement is about 60 billion litres per day and based on livestock population growth estimates, this daily requirement is predicted to increase by 0.4 billion litres per annum in the foreseeable future.

18.67. Freshwater fisheries in lakes and streams are an important source of food and protein. Fisheries of inland waters should be so managed as to maximize the yield of aquatic food organisms in an environmentally sound manner. This requires the conservation of water-quality and quantity, as well as of the functional morphology of the aquatic environment. On the other hand, fishing and aquaculture may themselves damage the aquatic ecosystem; hence their development should conform to guidelines for impact limitation. Present levels of production from inland fisheries, from both fresh and brackish water, are about 7 million tons per year and could increase to 16 million tons per year by the year 2000; however, any increase in environmental stress could jeopardize this rise.

Objectives

18.68. The key strategic principles for holistic and integrated environmentally sound management of water resources in the rural context may be set forth as follows:

(a) Water should be regarded as a finite resource having an economic value with significant social and economic implications reflecting the importance of meeting basic needs;

(b) Local communities must participate in all phases of water management, ensuring the full involvement of women in view of their crucial role in the practical day-to-day supply, management and use of water;

(c) Water resource management must be developed within a comprehensive set of policies for (i) human health; (ii) food production, preservation and distribution; (iii) disaster mitigation plans; (iv) environmental protection and conservation of the natural resource base;

(d) It is necessary to recognize and actively support the role of rural populations, with particular emphasis on women.

18.69. An International Action Programme on Water and Sustainable Agricultural Development (IAP-WASAD) has been initiated by FAO in cooperation with other international organizations. The main objective of the Action Programme is to assist developing countries in planning, developing and managing water resources on an integrated basis to meet present and future needs for agricultural production, taking into account environmental considerations.

18.70. The Action Programme has developed a framework for sustainable water use in the agricultural sector and identified priority areas for action at national, regional and global levels. Quantitative targets for new irrigation development, improvement of existing irrigation schemes and reclamation of waterlogged and salinized lands through drainage for 130 developing countries are estimated on the basis of food requirements, agro-climatic zones and availability of water and land.

18.71. FAO global projections for irrigation, drainage and small-scale water programmes by the year 2000 for 130 developing countries are as follows: (a) 15.2 million hectares of new irrigation development; (b) 12 million hectares of improvement/modernization of existing schemes; (c) 7 million hectares installed with drainage and water control facilities; and (d) 10 million hectares of small-scale water programmes and conservation.

18.72. The development of new irrigation areas at the above-mentioned level may give rise to environmental concerns in so far as it implies the destruction of wetlands, water pollution, increased sedimentation and a reduction in biodiversity. Therefore, new irrigation schemes should be accompanied by an environmental impact assessment, depending upon the scale of the scheme, in case significant negative environmental impacts are expected.

When considering proposals for new irrigation schemes, consideration should also be given to a more rational exploitation, and an increase in the efficiency or productivity, of any existing schemes capable of serving the same localities. Technologies for new irrigation schemes should be thoroughly evaluated, including their potential conflicts with other land uses. The active involvement of water-users groups is a supporting objective.

18.73. It should be ensured that rural communities of all countries, according to their capacities and available resources and taking advantage of international cooperation as appropriate, will have access to safe water in sufficient quantities and adequate sanitation to meet their health needs and maintain the essential qualities of their local environments.

18.74. The objectives with regard to water management for inland fisheries and aquaculture include conservation of water-quality and water-quantity requirements for optimum production and prevention of water pollution by aquacultural activities. The Action Programme seeks to assist member countries in managing the fisheries of inland waters through the promotion of sustainable management of capture fisheries as well as the development of environmentally sound approaches to intensification of aquaculture.

18.75. The objectives with regard to water management for livestock supply are twofold: provision of adequate amounts of drinking-water and safeguarding of drinking-water quality in accordance with the specific needs of different animal species. This entails maximum salinity tolerance levels and the absence of pathogenic organisms. No global targets can be set owing to large regional and intra-country variations.

Activities

18.76. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including the United Nations and other relevant organizations as appropriate, could implement the following activities:

(a) Water-supply and sanitation for the unserved rural poor:

(i) Establish national policies and budget priorities with regard to increasing service coverage;

(ii) Promote appropriate technologies;

(iii) Introduce suitable cost-recovery mechanisms, taking into account efficiency and equity through demand management mechanisms;

(iv) Promote community ownership and rights to water-supply and sanitation facilities;

(v) Establish monitoring and evaluation systems;

(vi) Strengthen the rural water-supply and sanitation sector with emphasis on institutional development, efficient management and an appropriate framework for financing of services;

(vii) Increase hygiene education and eliminate disease transmission foci;

(viii) Adopt appropriate technologies for water treatment;

(ix) Adopt wide-scale environmental management measures to control disease vectors;

(b) Water-use efficiency:

(i) Increase of efficiency and productivity in agricultural water use for better utilization of limited water resources;

(ii) Strengthen water and soil management research under irrigation and rain-fed conditions;

(iii) Monitor and evaluate irrigation project performance to ensure, inter alia, the optimal utilization and proper maintenance of the project;

(iv) Support water-users groups with a view to improving management performance at the local level;

(v) Support the appropriate use of relatively brackish water for irrigation;

(c) Waterlogging, salinity control and drainage:

(i) Introduce surface drainage in rain-fed agriculture to prevent temporary waterlogging and flooding of lowlands;

(ii) Introduce artificial drainage in irrigated and rain-fed agriculture;

(iii) Encourage conjunctive use of surface and groundwaters, including monitoring and water-balance studies;

(iv) Practise drainage in irrigated areas of arid and semi-arid regions;

(d) Water-quality management:

(i) Establish and operate cost-effective water-quality monitoring systems for agricultural water uses;

(ii) Prevent adverse effects of agricultural activities on water-quality for other social and economic activities and on wetlands, inter alia, through optimal use of on-farm input and the minimization of the use of external input in agricultural activities;

(iii) Establish biological, physical and chemical water-quality criteria for agricultural water-users and for marine and riverine ecosystems;

(iv) Minimize soil run-off and sedimentation;

(v) Dispose properly of sewage from human settlements and of manure produced by intensive livestock breeding;

(vi) Minimize adverse effects from agricultural chemicals by use of integrated pest management;

(vii) Educate communities about the pollution-related impacts of the use of fertilizers and chemicals on water-quality, food safety and human health;

(e) Water resources development programmes:

(i) Develop small-scale irrigation and water-supply for humans and livestock and for water and soil conservation;

(ii) Formulate large-scale and long-term irrigation development programmes, taking into account their effects on the local level, the economy and the environment;

(iii) Promote local initiatives for the integrated development and management of water resources;

(iv) Provide adequate technical advice and support and enhancement of institutional collaboration at the local community level;

(v) Promote a farming approach for land and water management that takes account of the level of education, the capacity to mobilize local communities and the ecosystem requirements of arid and semi-arid regions;

(vi) Plan and develop multi-purpose hydroelectric power schemes, making sure that environmental concerns are duly taken into account;

(f) Scarce water resources management:

(i) Develop long-term strategies and practical implementation programmes for agricultural water use under scarcity conditions with competing demands for water;

(ii) Recognize water as a social, economic and strategic good in irrigation planning and management;

(iii) Formulate specialized programmes focused on drought preparedness, with emphasis on food scarcity and environmental safeguards;

(iv) Promote and enhance waste-water reuse in agriculture;

(g) Water-supply for livestock:

(i) Improve quality of water available to livestock, taking into account their tolerance limits;

(ii) Increase the quantity of water sources available to livestock, in particular those in extensive grazing systems, in order to both reduce the distance needed to travel for water and to prevent overgrazing around water sources;

(iii) Prevent contamination of water sources with animal excrement in order to prevent the spread of diseases, in particular zoonosis;

(iv) Encourage multiple use of water-supplies through promotion of integrated agro-livestock-fishery systems;

(v) Encourage water spreading schemes for increasing water retention of extensive grasslands to stimulate forage production and prevent run-off;

(h) Inland fisheries:

(i) Develop the sustainable management of fisheries as part of national water resources planning;

(ii) Study specific aspects of the hydrobiology and environmental requirements of key inland fish species in relation to varying water regimes;

(iii) Prevent or mitigate modification of aquatic environments by other users or rehabilitate environments subjected to such modification on behalf of the sustainable use and conservation of biological diversity of living aquatic resources;

(iv) Develop and disseminate environmentally sound water resources development and management methodologies for the intensification of fish yield from inland waters;

(v) Establish and maintain adequate systems for the collection and interpretation of data on water quality and quantity and channel morphology related to the state and management of living aquatic resources, including fisheries;

(i) Aquaculture development:

(i) Develop environmentally sound aquaculture technologies that are compatible with local, regional and national water resources management plans and take into consideration social factors;

(ii) Introduce appropriate aquaculture techniques and related water development and management practices in countries not yet experienced in aquaculture;

(iii) Assess environmental impacts of aquaculture with specific reference to commercialized culture units and potential water pollution from processing centres;

(iv) Evaluate economic feasibility of aquaculture in relation to alternative use of water, taking into consideration the use of marginal-quality water and investment and operational requirements.

Means of implementation

(a) Financing and cost evaluation

18.77. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $13.2 billion, including about $4.5 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

18.78. There is an urgent need for countries to monitor water resources and water-quality, water and land use and crop production; compile inventories of type and extent of agricultural water development and of present and future contributions to sustainable agricultural development; evaluate the potential for fisheries and aquaculture development; and improve the availability and dissemination of data to planners, technicians, farmers and fishermen. Priority requirements for research are as follows:

(a) Identification of critical areas for water-related adaptive research;

(b) Strengthening of the adaptive research capacities of institutions in developing countries;

(c) Enhancement of translation of water-related farming and fishing systems research results into practical and accessible technologies and provision of the support needed for their rapid adoption at the field level.

18.79. Transfer of technology, both horizontal and vertical, needs to be strengthened. Mechanisms to provide credit, input supplies, markets, appropriate pricing and transportation must be developed jointly by countries and external support agencies. Integrated rural water-supply infrastructure, including facilities for water-related education and training and support services for agriculture, should be expanded for multiple uses and should assist in developing the rural economy.

(c) Human resource development

18.80. Education and training of human resources should be actively pursued at the national level through: (a) assessment of current and long-term human resources management and training needs; (b) establishment of a national policy for human resources development; and (c) initiation and implementation of training programmes for staff at all levels as well as for farmers. The necessary actions are as follows:

(a) Assess training needs for agricultural water management;

(b) Increase formal and informal training activities;

(c) Develop practical training courses for improving the ability of extension services to disseminate technologies and strengthen farmers' capabilities, with special reference to small-scale producers;

(d) Train staff at all levels, including farmers, fishermen and members of local communities, with particular reference to women;

(e) Increase the opportunities for career development to enhance the capabilities of administrators and officers at all levels involved in land- and water-management programmes.

(d) Capacity-building

18.81. The importance of a functional and coherent institutional framework at the national level to promote water and sustainable agricultural development has generally been fully recognized at present. In addition, an adequate legal framework of rules and regulations should be in place to facilitate actions on agricultural water-use, drainage, water-quality management, small-scale water programmes and the functioning of water-users' and fishermen's associations. Legislation specific to the needs of the agricultural water sector should be consistent with, and stem from, general legislation for the management of water resources. Actions should be pursued in the following areas:

(a) Improvement of water-use policies related to agriculture, fisheries and rural development and of legal frameworks for implementing such policies;

(b) Review, strengthening and restructuring, if required, of existing institutions in order to enhance their capacities in water-related activities, while recognizing the need to manage water resources at the lowest appropriate level;

(c) Review and strengthening, where necessary, of organizational structure, functional relationships and linkages among ministries and departments within a given ministry;

(d) Provision of specific measures that require support for institutional strengthening, _inter alia_, through long-term programme budgeting, staff training, incentives, mobility, equipment and coordination mechanisms;

(e) Enhancement of involvement of the private sector, where appropriate, in human resource development and provision of infrastructure;

(f) Transfer of existing and new water-use technologies by creating mechanisms for cooperation and information exchange among national and regional institutions.

G. Impacts of climate change on water resources

Basis for action

18.82. There is uncertainty with respect to the prediction of climate change at the global level. Although the uncertainties increase greatly at the regional, national and local levels, it is at the national level that the most important decisions would need to be made. Higher temperatures and decreased precipitation would lead to decreased water-supplies and increased water demands; they might cause deterioration in the quality of freshwater bodies, putting strains on the already fragile balance between supply and demand in many countries. Even where precipitation might increase, there is no guarantee that it would occur at the time of year when it could be used; in addition, there might be a likelihood of increased flooding. Any rise in sealevel will often cause the intrusion of salt water into estuaries, small islands and coastal aquifers and the flooding of low-lying coastal areas; this puts low-lying countries at great risk.

18.83. The Ministerial Declaration of the Second World Climate Conference states that "the potential impact of such climate change could pose an environmental threat of an up to now unknown magnitude ... and could even threaten survival in some small island States and in low-lying coastal, arid and semi-arid areas". 3/ The Conference recognized that among the most important impacts of climate change were its effects on the hydrologic cycle and on water management systems and, through these, on socio-economic systems. Increase in incidence of extremes, such as floods and droughts, would cause increased frequency and severity of disasters. The Conference therefore called for a strengthening of the necessary research and monitoring programmes and the exchange of relevant data and information, these actions to be undertaken at the national, regional and international levels.

Objectives

18.84. The very nature of this topic calls first and foremost for more information about and greater understanding of the threat being faced. This topic may be translated into the following objectives, consistent with the United Nations Framework Convention on Climate Change:

(a) To understand and quantify the threat of the impact of climate change on freshwater resources;

(b) To facilitate the implementation of effective national countermeasures, as and when the threatening impact is seen as sufficiently confirmed to justify such action;

(c) To study the potential impacts of climate change on areas prone to droughts and floods.

Activities

18.85. All States, according to their capacity and available resources, and through bilateral or multilateral cooperation, including the United Nations and other relevant organizations as appropriate, could implement the following activities:

(a) Monitor the hydrologic regime, including soil moisture, groundwater balance, penetration and transpiration of water-quality, and related climate factors, especially in the regions and countries most likely to suffer from the adverse effects of climate change and where the localities vulnerable to these effects should therefore be defined;

(b) Develop and apply techniques and methodologies for assessing the potential adverse effects of climate change, through changes in temperature, precipitation and sealevel rise, on freshwater resources and the flood risk;

(c) Initiate case-studies to establish whether there are linkages between climate changes and the current occurrences of droughts and floods in certain regions;

(d) Assess the resulting social, economic and environmental impacts;

(e) Develop and initiate response strategies to counter the adverse effects that are identified, including changing groundwater levels and to mitigate saline intrusion into aquifers;

(f) Develop agricultural activities based on brackish-water use;

(g) Contribute to the research activities under way within the framework of current international programmes.

Means of implementation

(a) Financing and cost evaluation

18.86. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $100 million, including about $40 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude

estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

18.87. Monitoring of climate change and its impact on freshwater bodies must be closely integrated with national and international programmes for monitoring the environment, in particular those concerned with the atmosphere, as discussed under other sections of Agenda 21, and the hydrosphere, as discussed under programme area B above. The analysis of data for indication of climate change as a basis for developing remedial measures is a complex task. Extensive research is necessary in this area and due account has to be taken of the work of the Intergovernmental Panel on Climate Change (IPCC), the World Climate Programme, the International Geosphere-Biosphere Programme (IGBP) and other relevant international programmes.

18.88. The development and implementation of response strategies requires innovative use of technological means and engineering solutions, including the installation of flood and drought warning systems and the construction of new water resource development projects such as dams, aqueducts, well fields, waste-water treatment plants, desalination works, levees, banks and drainage channels. There is also a need for coordinated research networks such as the International Geosphere-Biosphere Programme/Global Change System for Analysis, Research and Training (IGBP/START) network.

(c) Human resource development

18.89. The developmental work and innovation depend for their success on good academic training and staff motivation. International projects can help by enumerating alternatives, but each country needs to establish and implement the necessary policies and to develop its own expertise in the scientific and engineering challenges to be faced, as well as a body of dedicated individuals who are able to interpret the complex issues concerned for those required to make policy decisions. Such specialized personnel need to be trained, hired and retained in service, so that they may serve their countries in these tasks.

(d) Capacity-building

18.90. There is a need, however, to build a capacity at the national level to develop, review and implement response strategies. Construction of major engineering works and installation of forecasting systems will require significant strengthening of the agencies responsible, whether in the public or the private sector. Most critical is the requirement for a socio-economic mechanism that can review predictions of the impact of climate change and possible response strategies and make the necessary judgements and decisions.

Notes

1/ *Report of the United Nations Water Conference, Mar del Plata, 14-25 March 1977* (United Nations publication, Sales No. E.77.II.A.12), part one, chap. I, sect. C, para. 35.

2/ Ibid., part one, chap. I, resolution II.

3/ A/45/696/Add.1, annex III, preamble, para. 2.

Chapter 19

ENVIRONMENTALLY SOUND MANAGEMENT OF TOXIC CHEMICALS, INCLUDING PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN TOXIC AND DANGEROUS PRODUCTS

INTRODUCTION

19.1. A substantial use of chemicals is essential to meet the social and economic goals of the world community and today's best practice demonstrates that they can be used widely in a cost-effective manner and with a high degree of safety. However, a great deal remains to be done to ensure the environmentally sound management of toxic chemicals, within the principles of sustainable development and improved quality of life for humankind. Two of the major problems, particularly in developing countries, are (a) lack of sufficient scientific information for the assessment of risks entailed by the use of a great number of chemicals, and (b) lack of resources for assessment of chemicals for which data are at hand.

19.2. Gross chemical contamination, with grave damage to human health, genetic structures and reproductive outcomes, and the environment, has in recent times been continuing within some of the world's most important industrial areas. Restoration will require major investment and development of new techniques. The long-range effects of pollution, extending even to the fundamental chemical and physical processes of the Earth's atmosphere and climate, are becoming understood only recently and the importance of those effects is becoming recognized only recently as well.

19.3. A considerable number of international bodies are involved in work on chemical safety. In many countries work programmes for the promotion of chemical safety are in place. Such work has international implications, as chemical risks do not respect national boundaries. However, a significant strengthening of both national and international efforts is needed to achieve an environmentally sound management of chemicals.

19.4. Six programme areas are proposed:

(a) Expanding and accelerating international assessment of chemical risks;

(b) Harmonization of classification and labelling of chemicals;

(c) Information exchange on toxic chemicals and chemical risks;

(d) Establishment of risk reduction programmes;

(e) Strengthening of national capabilities and capacities for management of chemicals;

(f) Prevention of illegal international traffic in toxic and dangerous products.

In addition, the short final subsection G deals with the enhancement of cooperation related to several programme areas.

19.5. The six programme areas are together dependent for their successful implementation on intensive international work and improved coordination of current international activities, as well as on the identification and application of technical, scientific, educational and financial means, in particular for developing countries. To varying degrees, the programme areas involve hazard assessment (based on the intrinsic properties of chemicals), risk assessment (including assessment of exposure), risk acceptability and risk management.

19.6. Collaboration on chemical safety between the United Nations Environment Programme (UNEP), the International Labour Organisation (ILO) and the World Health Organization (WHO) in the International Programme on Chemical Safety (IPCS) should be the nucleus for international cooperation on environmentally sound management of toxic chemicals. All efforts should be made to strengthen this programme. Cooperation with other programmes, such as those of the Organisation for Economic Cooperation and Development (OECD) and the European Communities (EC) and other regional and governmental chemical programmes, should be promoted.

19.7. Increased coordination of United Nations bodies and other international organizations involved in chemicals assessment and management should be further promoted. Within the framework of IPCS, an intergovernmental meeting, convened by the Executive Director of UNEP, was held in London in December 1991 to further explore this matter (see paras. 19.75 and 19.76).

19.8. The broadest possible awareness of chemical risks is a prerequisite for achieving chemical safety. The principle of the right of the community and of workers to know those risks should be recognized. However, the right to know the identity of hazardous ingredients should be balanced with industry's right to protect confidential business information. (Industry, as referred to in this chapter, shall be taken to include large industrial enterprises and transnational corporations as well as domestic industries.) The industry initiative on responsible care and product stewardship should be developed and promoted. Industry should apply adequate standards of operation in all countries in order not to damage human health and the environment.

19.9. There is international concern that part of the international movement of toxic and dangerous products is being carried out in contravention of existing national legislation and international instruments, to the detriment of the environment and public health of all countries, particularly developing countries.

19.10. In resolution 44/226 of 22 December 1989, the General Assembly requested each regional commission, within existing resources, to contribute to the prevention of the illegal traffic in toxic and dangerous products and wastes by monitoring and making regional assessments of that illegal traffic and its environmental and health implications. The Assembly also requested the regional commissions to interact among themselves and to cooperate with the United Nations Environment Programme, with a view to maintaining efficient and coordinated monitoring and assessment of the illegal traffic in toxic and dangerous products and wastes.

PROGRAMME AREAS

A. Expanding and accelerating international assessment of chemical risks

19.11. Assessing the risks to human health and the environment hazards that a chemical may cause is a prerequisite to planning for its safe and beneficial use. Among the approximately 100,000 chemical substances in commerce and the thousands of substances of natural origin with which human beings come into contact, many appear as pollutants and contaminants in food, commercial products and the various environmental media. Fortunately, exposure to most chemicals (some 1,500 cover over 95 per cent of total world production) is rather limited, as most are used in very small amounts. However, a serious problem is that even for a great number of chemicals characterized by high-volume production, crucial data for risk assessment are often lacking. Within the framework of the OECD chemicals programme such data are now being generated for a number of chemicals.

19.12. Risk assessment is resource-intensive. It could be made cost-effective by strengthening international cooperation and better coordination, thereby making the best use of available resources and avoiding unnecessary duplication of effort. However, each nation should have a critical mass of technical staff with experience in toxicity testing and exposure analysis, which are two important components of risk assessment.

Objectives

19.13. The objectives of this programme area are:

(a) To strengthen international risk assessment. Several hundred priority chemicals or groups of chemicals, including major pollutants and contaminants of global significance, should be assessed by the year 2000, using current selection and assessment criteria;

(b) To produce guidelines for acceptable exposure for a greater number of toxic chemicals, based on peer review and scientific consensus distinguishing between health- or environment-based exposure limits and those relating to socio-economic factors.

Activities

(a) Management-related activities

19.14. Governments, through the cooperation of relevant international organizations and industry, where appropriate, should:

(a) Strengthen and expand programmes on chemical risk assessment within the United Nations system IPCS (UNEP, ILO, WHO) and the Food and Agriculture Organization of the United Nations (FAO), together with other organizations, including the Organisation for Economic Cooperation and Development (OECD), based on an agreed approach to data-quality assurance, application of assessment criteria, peer review and linkages to risk management activities, taking into account the precautionary approach;

(b) Promote mechanisms to increase collaboration among Governments, industry, academia and relevant non-governmental organizations involved in the various aspects of risk assessment of chemicals and related processes, in particular the promoting and coordinating of research activities to improve understanding of the mechanisms of action of toxic chemicals;

(c) Encourage the development of procedures for the exchange by countries of their assessment reports on chemicals with other countries for use in national chemical assessment programmes.

(b) Data and information

19.15. Governments, through the cooperation of relevant international organizations and industry, where appropriate, should:

(a) Give high priority to hazard assessment of chemicals, that is, of their intrinsic properties as the appropriate basis for risk assessment;

(b) Generate data necessary for assessment, building, inter alia, on programmes of IPCS (UNEP, WHO, ILO), FAO, OECD and EC and on established programmes other regions and Governments. Industry should participate actively.

19.16. Industry should provide data for substances produced that are needed specifically for the assessment of potential risks to human health and the environment. Such data should be made available to relevant national competent authorities and international bodies and other interested parties involved in hazard and risk assessment, and to the greatest possible extent to the public also, taking into account legitimate claims of confidentiality.

(c) International and regional cooperation and coordination

19.17. Governments, through the cooperation of relevant international organizations and industry, where appropriate, should:

(a) Develop criteria for priority-setting for chemicals of global concern with respect to assessment;

(b) Review strategies for exposure assessment and environmental monitoring to allow for the best use of available resources, to ensure compatibility of data and to encourage coherent national and international strategies for that assessment.

Means of implementation

(a) Financial and cost evaluation

19.18. Most of the data and methods for chemical risk assessment are generated in the developed countries and an expansion and acceleration of the assessment work will call for a considerable increase in research and safety testing by industry and research institutions. The cost projections address the needs to strengthen the capacities of relevant United Nations bodies and are based on current experience in IPCS. It should be noted that there are considerable costs, often not possible to quantify, that are not included. These comprise costs to industry and Governments of generating the safety data underlying the assessments and costs to Governments of providing background documents and draft assessment statements to IPCS, the International Register of Potentially Toxic Chemicals (IRPTC) and OECD. They also include the cost of accelerated work in non-United Nations bodies such as OECD and EC.

19.19. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $30 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

19.20. Major research efforts should be launched in order to improve methods for assessment of chemicals as work towards a common framework for risk assessment and to improve procedures for using toxicological and epidemiological data to predict the effects of chemicals on human health and the environment, so as to enable decision makers to adopt adequate policies and measures to reduce risks posed by chemicals.

19.21. Activities include:

(a) Strengthening research on safe/safer alternatives to toxic chemicals that pose an unreasonable and otherwise unmanageable risk to the environment or human health and to those that are toxic, persistent and bio-accumulative and that cannot be adequately controlled;

(b) Promotion of research on, and validation of, methods constituting a replacement for those using test animals (thus reducing the use of animals for testing purposes);

(c) Promotion of relevant epidemiological studies with a view to establishing a cause-and-effect relationship between exposure to chemicals and the occurrence of certain diseases;

(d) Promotion of ecotoxicological studies with the aim of assessing the risks of chemicals to the environment.

(c) Human resource development

19.22. International organizations, with the participation of Governments and non-governmental organizations, should launch training and education projects involving women and children, who are at greatest risk, in order to enable countries, and particularly developing countries, to make maximum national use of international assessments of chemical risks.

(d) Capacity-building

19.23. International organizations, building on past, present and future assessment work, should support countries, particularly developing countries, in developing and strengthening risk assessment capabilities at national and regional levels to minimize, and as far as possible control and prevent, risk in the manufacturing and use of toxic and hazardous chemicals. Technical cooperation and financial support or other contributions should be given to activities aimed at expanding and accelerating the national and international assessment and control of chemical risks to enable the best choice of chemicals.

B. Harmonization of classification and labelling of chemicals

Basis for action

19.24. Adequate labelling of chemicals and the dissemination of safety data sheets such as ICSCs (International Chemical Safety Cards) and similarly written materials, based on assessed hazards to health and environment, are the simplest and most efficient way of indicating how to handle and use chemicals safely.

19.25. For the safe transport of dangerous goods, including chemicals, a comprehensive scheme elaborated within the United Nations system is in current use. This scheme mainly takes into account the acute hazards of chemicals.

19.26. Globally harmonized hazard classification and labelling systems are not yet available to promote the safe use of chemicals, *inter alia*, at the workplace or in the home. Classification of chemicals can be made for different purposes and is a particularly important tool in establishing labelling systems. There is a need to develop harmonized hazard classification and labelling systems, building on ongoing work.

Objectives

19.27. A globally harmonized hazard classification and compatible labelling system, including material safety data sheets and easily understandable symbols, should be available, if feasible, by the year 2000.

Activities

(a) Management-related activities

19.28. Governments, through the cooperation of relevant international organizations and industry, where appropriate, should launch a project with a view to establishing and elaborating a harmonized classification and compatible labelling system for chemicals for use in all United Nations official languages including adequate pictograms. Such a labelling system should not lead to the imposition of unjustified trade barriers. The new system should draw on current systems to the greatest extent possible; it should be developed in steps and should address the subject of compatibility with labels of various applications.

(b) Data and information

19.29. International bodies including, *inter alia*, IPCS (UNEP, ILO, WHO), FAO, the International Maritime Organization (IMO), the United Nations Committee of Experts on the Transport of Dangerous Goods and OECD, in cooperation with regional and national authorities having existing classification and labelling and other information-dissemination systems, should establish a coordinating group to:

(a) Evaluate and, if appropriate, undertake studies of existing hazard classification and information systems to establish general principles for a globally harmonized system;

(b) Develop and implement a work plan for the establishment of a globally harmonized hazard classification system. The plan should include a description of the tasks to be completed, deadline for completion and assignment of tasks to the participants in the coordinating group;

(c) Elaborate a harmonized hazard classification system;

(d) Draft proposals for standardization of hazard communication terminology and symbols in order to enhance risk management of chemicals and facilitate both international trade and translation of information into the end-user's language;

(e) Elaborate a harmonized labelling system.

Means of implementation

(a) Financial and cost evaluation

19.30. The Conference secretariat has included the technical assistance costs related to this programme in estimates provided in programme area E. They estimate the average total annual cost (1993-2000) for strengthening international organizations to be about $3 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Human resource development

19.31. Governments and institutions and non-governmental organizations, with the collaboration of appropriate organizations and programmes of the United Nations, should launch training courses and information campaigns to facilitate the understanding and use of a new harmonized classification and compatible labelling system for chemicals.

(c) Capacity-building

19.32. In strengthening national capacities for management of chemicals, including development and implementation of, and adaptation to, new classification and labelling systems, the creation of trade barriers should be avoided and the limited capacities and resources of a large number of countries, particularly developing countries, for implementing such systems, should be taken into full account.

C. Information exchange on toxic chemicals and chemical risks

Basis for action

19.33. The following activities, related to information exchange on the benefits as well as the risks associated with the use of chemicals, are aimed at enhancing the sound management of toxic chemicals through the exchange of scientific, technical, economic and legal information.

19.34. The London Guidelines for the Exchange of Information on Chemicals in International Trade are a set of guidelines adopted by Governments with a view to increasing chemical safety through the exchange of information on chemicals. Special provisions have been included in the guidelines with regard to the exchange of information on banned and severely restricted chemicals.

19.35. The export to developing countries of chemicals that have been banned in producing countries or whose use has been severely restricted in some industrialized countries has been the subject of concern, as some importing countries lack the ability to ensure safe use, owing to inadequate infrastructure for controlling the importation, distribution, storage, formulation and disposal of chemicals.

19.36. In order to address this issue, provisions for Prior Informed Consent (PIC) procedures were introduced in 1989 in the London Guidelines (UNEP) and in the International Code of Conduct on the Distribution and Use of Pesticides (FAO). In addition a joint FAO/UNEP programme has been launched for the operation of the PIC procedures for chemicals, including the selection of chemicals to be included in the PIC procedure and preparation of PIC decision guidance documents. The ILO chemicals convention calls for communication between exporting and importing countries when hazardous chemicals have been prohibited for reasons of safety and health at work. Within the General Agreement on Tariffs and Trade (GATT) framework, negotiations have been pursued with a view to creating a binding instrument on products banned or severely restricted in the domestic market. Further, the GATT Council has agreed, as stated in its decision contained in C/M/251, to extend the mandate of the working group for a period of three months, to begin from the date of the group's next meeting, and has authorized the Chairman to hold consultations on timing with respect to convening this meeting.

19.37. Notwithstanding the importance of the PIC procedure, information exchange on all chemicals is necessary.

Objectives

19.38. The objectives of this programme area are:

(a) To promote intensified exchange of information on chemical safety, use and emissions among all involved parties;

(b) To achieve by the year 2000, as feasible, full participation in and implementation of the PIC procedure, including possible mandatory applications through legally binding instruments contained in the Amended London Guidelines and in the FAO International Code of Conduct, taking into account the experience gained within the PIC procedure.

Activities

(a) Management-related activities

19.39. Governments and relevant international organizations with the cooperation of industry should:

(a) Strengthen national institutions responsible for information exchange on toxic chemicals and promote the creation of national centres where these centres do not exist;

(b) Strengthen international institutions and networks, such as IRPTC, responsible for information exchange on toxic chemicals;

(c) Establish technical cooperation with, and provide information to, other countries, especially those with shortages of technical expertise, including training in the interpretation of relevant technical data, such as Environmental Health Criteria Documents, Health and Safety Guides and International Chemical Safety Cards (published by IPCS); monographs on the Evaluation of Carcinogenic Risks of Chemicals to Humans (published by the International Agency for Research on Cancer (IARC)); and decision guidance documents (provided through the FAO/UNEP joint programme on PIC), as well as those submitted by industry and other sources;

(d) Implement the PIC procedures as soon as possible and, in the light of experience gained, invite relevant international organizations, such as UNEP, GATT, FAO, WHO and others, in their respective area of competence to consider working expeditiously towards the conclusion of legally binding instruments.

(b) Data and information

19.40. Governments and relevant international organizations with the cooperation of industry should:

(a) Assist in the creation of national chemical information systems in developing countries and improve access to existing international systems;

(b) Improve databases and information systems on toxic chemicals, such as emission inventory programmes, through provision of training in the use of those systems as well as software, hardware and other facilities;

(c) Provide knowledge and information on severely restricted or banned chemicals to importing countries to enable them to judge and take decisions on whether to import, and how to handle, those chemicals and establish joint responsibilities in trade of chemicals between importing and exporting countries;

(d) Provide data necessary to assess risks to human health and the environment of possible alternatives to banned or severely restricted chemicals.

19.41. United Nations organizations should provide, as far as possible, all international information material on toxic chemicals in all United Nations official languages.

(c) International and regional cooperation and coordination

19.42. Governments and relevant international organizations with the cooperation of industry should cooperate in establishing, strengthening and expanding, as appropriate, the network of designated national authorities for exchange of information on chemicals and establish a technical exchange programme to produce a core of trained personnel within each participating country.

Means of implementation

Financing and cost evaluation

19.43. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $10 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

D. Establishment of risk reduction programmes

Basis for action

19.44. There are often alternatives to toxic chemicals currently in use. Thus, risk reduction can sometimes be achieved by using other chemicals or even non-chemical technologies. The classic example of risk reduction is the substitution of harmless or less harmful substances for harmful ones. Establishment of pollution prevention procedures and setting standards for chemicals in each environmental medium, including food and water, and in consumer goods, constitute another example of risk reduction. In a wider context, risk reduction involves broad-based approaches to reducing the risks of toxic chemicals, taking into account the entire life cycle of the chemicals. Such approaches could encompass both regulatory and non-regulatory measures, such as promotion of the use of cleaner products and technologies, pollution prevention procedures and programmes, emission inventories, product labelling, use limitations, economic incentives, procedures for safe handling and exposure regulations, and the phasing out or banning of chemicals that pose unreasonable and otherwise unmanageable risks to human health and the environment and of those that are toxic, persistent and bio-accumulative and whose use cannot be adequately controlled.

19.45. In the agricultural area, integrated pest management, including the use of biological control agents as alternatives to toxic pesticides, is one approach to risk reduction.

19.46. Other areas of risk reduction encompass the prevention of chemical accidents, prevention of poisoning by chemicals and the undertaking of toxicovigilance and coordination of clean-up and rehabilitation of areas damaged by toxic chemicals.

19.47. The OECD Council has decided that OECD member countries should establish or strengthen national risk reduction programmes. The International Council of Chemical Associations (ICCA) has introduced initiatives regarding responsible care and product stewardship aimed at reduction of chemical risks. The Awareness and Preparedness for Emergencies at Local Level (APELL) programme of UNEP is designed to assist decision makers and technical personnel in improving community awareness of hazardous installations and in preparing response plans. ILO has published a Code of Practice on the prevention of major industrial accidents and is preparing an international instrument on the prevention of industrial disasters for eventual adoption in 1993.

Objectives

19.48. The objective of the programme area is to eliminate unacceptable or unreasonable risks and, to the extent economically feasible, to reduce risks posed by toxic chemicals, by employing a broad-based approach involving a wide range of risk reduction options and by taking precautionary measures derived from a broad-based life-cycle analysis.

Activities

(a) Management-related activities

19.49. Governments, through the cooperation of relevant international organizations and industry, where appropriate, should:

(a) Consider adopting policies based on accepted producer liability principles, where appropriate, as well as precautionary, anticipatory and life-cycle approaches to chemical management, covering manufacturing, trade, transport, use and disposal;

(b) Undertake concerted activities to reduce risks for toxic chemicals, taking into account the entire life cycle of the chemicals. These activities could encompass both regulatory and non-regulatory measures, such as promotion of the use of cleaner products and technologies; emission inventories; product labelling; use limitations; economic incentives; and the phasing out or banning of toxic chemicals that pose an unreasonable and otherwise unmanageable risk to the environment or human health and those that are toxic, persistent and bio-accumulative and whose use cannot be adequately controlled;

(c) Adopt policies and regulatory and non-regulatory measures to identify, and minimize exposure to, toxic chemicals by replacing them with less toxic substitutes and ultimately phasing out the chemicals that pose unreasonable and otherwise unmanageable risk to human health and the environment and those that are toxic, persistent and bio-accumulative and whose use cannot be adequately controlled;

(d) Increase efforts to identify national needs for standard setting and implementation in the context of the FAO/WHO Codex Alimentarius in order to minimize adverse effects of chemicals in food;

(e) Develop national policies and adopt the necessary regulatory framework for prevention of accidents, preparedness and response, *inter alia*, through land-use planning, permit systems and reporting requirements on accidents, and work with the OECD/UNEP international directory of regional response centres and the APELL programme;

(f) Promote establishment and strengthening, as appropriate, of national poison control centres to ensure prompt and adequate diagnosis and treatment of poisonings;

(g) Reduce overdependence on the use of agricultural chemicals through alternative farming practices, integrated pest management and other appropriate means;

(h) Require manufacturers, importers and others handling toxic chemicals to develop, with the cooperation of producers of such chemicals, where applicable, emergency response procedures and preparation of on-site and off-site emergency response plans;

(i) Identify, assess, reduce and minimize, or eliminate as far as feasible by environmentally sound disposal practices, risks from storage of outdated chemicals.

19.50. Industry should be encouraged to:

(a) Develop an internationally agreed upon code of principles for the management of trade in chemicals, recognizing in particular the responsibility for making available information on potential risks and environmentally sound disposal practices if those chemicals become wastes, in cooperation with Governments and relevant international organizations and appropriate agencies of the United Nations system;

(b) Develop application of a "responsible care" approach by producers and manufacturers towards chemical products, taking into account the total life cycle of such products;

(c) Adopt, on a voluntary basis, community right-to-know programmes based on international guidelines, including sharing of information on causes of accidental and potential releases and means of preventing them, and reporting on annual routine emissions of toxic chemicals to the environment in the absence of host country requirements.

(b) Data and information

19.51. Governments, through the cooperation of relevant international organizations and industry, where appropriate, should:

(a) Promote exchange of information on national and regional activities to reduce the risks of toxic chemicals;

(b) Cooperate in the development of communication guidelines on chemical risks at the national level to promote information exchange with the public and the understanding of risks.

(c) International and regional cooperation and coordination

19.52. Governments, through the cooperation of relevant international organizations and industry, where appropriate, should:

(a) Collaborate to develop common criteria to determine which chemicals are suitable candidates for concerted risk reduction activities;

(b) Coordinate concerted risk reduction activities;

(c) Develop guidelines and policies for the disclosure by manufacturers, importers and others using toxic chemicals of toxicity information declaring risks and emergency response arrangements;

(d) Encourage large industrial enterprises including transnational corporations and other enterprises wherever they operate to introduce policies demonstrating the commitment, with reference to the environmentally sound management of toxic chemicals, to adopt standards of operation equivalent to or not less stringent than those existing in the country of origin;

(e) Encourage and support the development and adoption by small- and medium-sized industries of relevant procedures for risk reduction in their activities;

(f) Develop regulatory and non-regulatory measures and procedures aimed at preventing the export of chemicals that are banned, severely restricted, withdrawn or not approved for health or environmental reasons, except when such export has received prior written consent from the importing country or is otherwise in accordance with the PIC procedure;

(g) Encourage national and regional work to harmonize evaluation of pesticides;

(h) Promote and develop mechanisms for the safe production, management and use of dangerous materials, formulating programmes to substitute for them safer alternatives, where appropriate;

(i) Formalize networks of emergency response centres;

(j) Encourage industry, with the help of multilateral cooperation, to phase out as appropriate, and dispose of, any banned chemicals that are still in stock or in use in an environmentally sound manner, including safe reuse, where approved and appropriate.

Means of implementation

(a) Financial and cost evaluation

19.53. The Conference secretariat has included most costs related to this programme in estimates provided for programme areas A and E. They estimate other requirements for training and strengthening the emergency and poison control centres to be about $4 million annually from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

19.54. Governments, in cooperation with relevant international organizations and programmes, should:

(a) Promote technology that would minimize release of, and exposure to, toxic chemicals in all countries;

(b) Carry out national reviews, as appropriate, of previously accepted pesticides whose acceptance was based on criteria now recognized as insufficient or outdated and of their possible replacement with other pest control methods, particularly in the case of pesticides that are toxic, persistent and/or bio-accumulative.

E. Strengthening of national capabilities and capacities for management of chemicals

Basis for action

19.55. Many countries lack national systems to cope with chemical risks. Most countries lack scientific means of collecting evidence of misuse and of judging the impact of toxic chemicals on the environment, because of the difficulties involved in the detection of many problematic chemicals and systematically tracking their flow. Significant new uses are among the potential hazards to human health and the environment in developing countries. In several countries with systems in place there is an urgent need to make those systems more efficient.

19.56. Basic elements for sound management of chemicals are: (a) adequate legislation, (b) information gathering and dissemination, (c) capacity for risk assessment and interpretation, (d) establishment of risk management policy, (e) capacity for implementation and enforcement, (f) capacity for rehabilitation of contaminated sites and poisoned persons, (g) effective education programmes and (h) capacity to respond to emergencies.

19.57. As management of chemicals takes place within a number of sectors related to various national ministries, experience suggests that a coordinating mechanism is essential.

Objective

19.58. By the year 2000, national systems for environmentally sound management of chemicals, including legislation and provisions for implementation and enforcement, should be in place in all countries to the extent possible.

Activities

(a) Management-related activities

19.59. Governments, where appropriate and with the collaboration of relevant intergovernmental organizations, agencies and programmes of the United Nations system, should:

(a) Promote and support multidisciplinary approaches to chemical safety problems;

(b) Consider the need to establish and strengthen, where appropriate, a national coordinating mechanism to provide a liaison for all parties involved in chemical safety activities (for example, agriculture, environment, education, industry, labour, health, transportation, police, civil defence, economic affairs, research institutions, and poison control centres);

(c) Develop institutional mechanisms for the management of chemicals, including effective means of enforcement;

(d) Establish and develop or strengthen, where appropriate, networks of emergency response centres, including poison control centres;

(e) Develop national and local capabilities to prepare for and respond to accidents by taking into account the UNEP APELL programme and similar programmes on accident prevention, preparedness and response, where appropriate, including regularly tested and updated emergency plans;

(f) Develop, in cooperation with industry, emergency response procedures, identifying means and equipment in industries and plants necessary to reduce impacts of accidents.

(b) Data and information

19.60. Governments should:

(a) Direct information campaigns such as programmes providing information about chemical stockpiles, environmentally safer alternatives and emission inventories that could also be a tool for risk reduction to the general public to increase the awareness of problems of chemical safety;

(b) Establish, in conjunction with IRPTC, national registers and databases, including safety information, for chemicals;

(c) Generate field monitoring data for toxic chemicals of high environmental importance;

(d) Cooperate with international organizations, where appropriate, to effectively monitor and control the generation, manufacturing, distribution, transportation and disposal activities relating to toxic chemicals, to foster preventive and precautionary approaches and ensure compliance with safety management rules, and provide accurate reporting of relevant data.

(c) International and regional cooperation and coordination

19.61. Governments, with the cooperation of international organizations, where appropriate, should:

(a) Prepare guidelines, where not already available, with advice and check-lists for enacting legislation in the chemical safety field;

(b) Support countries, particularly developing countries, in developing and further strengthening national legislation and its implementation;

(c) Consider adoption of community right-to-know or other public information-dissemination programmes, when appropriate, as possible risk reduction tools. Appropriate international organizations, in particular UNEP, OECD, the Economic Commission for Europe (ECE) and other interested parties, should consider the possibility of developing a guidance document on the establishment of such programmes for use by interested Governments. The document should build on existing work on accidents and include new guidance on toxic emission inventories and risk communication. Such guidance should include harmonization of requirements, definitions and data elements to promote uniformity and allow sharing of data internationally;

(d) Build on past, present and future risk assessment work at an international level, to support countries, particularly developing countries, in developing and strengthening risk assessment capabilities at national and regional levels to minimize risk in the manufacturing and use of toxic chemicals;

(e) Promote implementation of UNEP's APELL programme and, in particular, use of an OECD/UNEP international directory of emergency response centres;

(f) Cooperate with all countries, particularly developing countries, in the setting up of an institutional mechanism at the national level and the development of appropriate tools for management of chemicals;

(g) Arrange information courses at all levels of production and use, aimed at staff working on chemical safety issues;

(h) Develop mechanisms to make maximum use in countries of internationally available information;

(i) Invite UNEP to promote principles for accident prevention, preparedness and response for Governments, industry and the public, building on ILO, OECD and ECE work in this area.

Means of implementation

(a) Financing and cost evaluation

19.62. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme in developing countries to be about $600 million, including $150 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

19.63. International organizations should:

(a) Promote the establishment and strengthening of national laboratories to ensure the availability of adequate national control in all countries regarding the importation, manufacture and use of chemicals;

(b) Promote translation, where feasible, of internationally prepared documents on chemical safety into local languages and support various levels of regional activities related to technology transfer and information exchange.

(c) Human resource development

19.64. International organizations should:

(a) Enhance technical training for developing countries in relation to risk management of chemicals;

(b) Promote and increase support for research activities at the local level by providing grants and fellowships for studies at recognized research institutions active in disciplines of importance for chemical safety programmes.

19.65. Governments should organize, in collaboration with industry and trade unions, training programmes in the management of chemicals, including emergency response, targeted at all levels. In all countries basic elements of chemical safety principles should be included in the primary education curricula.

F. Prevention of illegal international traffic in toxic and dangerous products

19.66. There is currently no global international agreement on traffic in toxic and dangerous products (toxic and dangerous products are those that are banned, severely restricted, withdrawn or not approved for use or sale by Governments in order to protect public health and the environment). However, there is international concern that illegal international traffic in these products is detrimental to public health and the environment, particularly in developing countries, as acknowledged by the General Assembly in resolutions 42/183 and 44/226. Illegal traffic refers to traffic that is carried out in contravention of a country's laws or relevant international legal instruments. The concern also relates to transboundary movements of those products that are not carried out in accordance with applicable internationally adopted guidelines and principles. Activities under this programme area are intended to improve detection and prevention of the traffic concerned.

19.67. Further strengthening of international and regional cooperation is needed to prevent illegal transboundary movement of toxic and dangerous products. Furthermore, capacity-building at the national level is needed to improve monitoring and enforcement capabilities involving recognition of the fact that appropriate penalties may need to be imposed under an effective enforcement programme. Other activities envisaged in the present chapter (for example, under paragraph 19.39 (d)) will also contribute to achieving these objectives.

Objectives

19.68. The objectives of the programme are:

(a) To reinforce national capacities to detect and halt any illegal attempt to introduce toxic and dangerous products into the territory of any State, in contravention of national legislation and relevant international legal instruments;

(b) To assist all countries, particularly developing countries, in obtaining all appropriate information concerning illegal traffic in toxic and dangerous products.

Activities

(a) Management-related activities

19.69. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

(a) Adopt, where necessary, and implement legislation to prevent the illegal import and export of toxic and dangerous products;

(b) Develop appropriate national enforcement programmes to monitor compliance with such legislation, and detect and deter violations through appropriate penalties.

(b) Data and information

19.70. Governments should develop, as appropriate, national alert systems to assist in detecting illegal traffic in toxic and dangerous products; local communities, and others could be involved in the operation of such a system.

19.71. Governments should cooperate in the exchange of information on illegal transboundary movements of toxic and dangerous products and should make such information available to appropriate United Nations bodies, such as UNEP and the regional commissions.

(c) International and regional cooperation and coordination

19.72. Further strengthening of international and regional cooperation is needed to prevent illegal transboundary movement of toxic and dangerous products.

19.73. The regional commissions, in cooperation with and relying upon expert support and advice from UNEP and other relevant bodies of the United Nations, should monitor, on the basis of data and information provided by Governments, and on a continuous basis make regional assessments of, the illegal traffic in toxic and dangerous products and its environmental, economic and health implications, in each region, drawing upon the results and experience gained in the joint UNEP/ESCAP preliminary assessment of illegal traffic, expected to be completed in August 1992.

19.74. Governments and international organizations, as appropriate, should cooperate with developing countries in strengthening their institutional and regulatory capacities in order to prevent illegal import and export of toxic and dangerous products.

G. Enhancement of international cooperation relating to several of the programme areas

19.75. A meeting of government-designated experts, held in London in December 1991, made recommendations for increased coordination among United Nations bodies and other international organizations involved in chemical risk assessment and management. That meeting called for the taking of appropriate measures to enhance the role of IPCS and establish an intergovernmental forum on chemical risk assessment and management.

19.76. To further consider the recommendations of the London meeting and initiate action on them, as appropriate, the Executive Heads of WHO, ILO and UNEP are invited to convene an intergovernmental meeting within one year, which could constitute the first meeting of the intergovernmental forum.

Chapter 20

ENVIRONMENTALLY SOUND MANAGEMENT OF HAZARDOUS WASTES, INCLUDING PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN HAZARDOUS WASTES

INTRODUCTION

20.1. Effective control of the generation, storage, treatment, recycling and reuse, transport, recovery and disposal of hazardous wastes is of paramount importance for proper health, environmental protection and natural resource management, and sustainable development. This will require the active cooperation and participation of the international community, Governments and industry. Industry, as referred to in this paper, shall include large industrial enterprises, including transnational corporations and domestic industry.

20.2. Prevention of the generation of hazardous wastes and the rehabilitation of contaminated sites are the key elements, and both require knowledge, experienced people, facilities, financial resources and technical and scientific capacities.

20.3. The activities outlined in the present chapter are very closely related to, and have implications for, many of the programme areas described in other chapters, so that an overall integrated approach to hazardous waste management is necessary.

20.4. There is international concern that part of the international movement of hazardous wastes is being carried out in contravention of existing national legislation and international instruments to the detriment of the environment and public health of all countries, particularly developing countries.

20.5. In section I of resolution 44/226 of 22 December 1989, the General Assembly requested each regional commission, within existing resources, to contribute to the prevention of the illegal traffic in toxic and dangerous products and wastes by monitoring and making regional assessments of that illegal traffic and its environmental and health implications. The Assembly also requested the regional commissions to interact among themselves and cooperate with the United Nations Environment Programme (UNEP), with a view to maintaining efficient and coordinated monitoring and assessment of the illegal traffic in toxic and dangerous products and wastes.

Overall objective

20.6. Within the framework of integrated life-cycle management, the overall objective is to prevent to the extent possible, and minimize, the generation of hazardous wastes, as well as to manage those wastes in such a way that they do not cause harm to health and the environment.

Overall targets

20.7. The overall targets are:

(a) Preventing or minimizing the generation of hazardous wastes as part of an overall integrated cleaner production approach; eliminating or reducing to a minimum transboundary movements of hazardous wastes, consistent with the environmentally sound and efficient management of those wastes; and ensuring that environmentally sound hazardous waste management options are pursued to the maximum extent possible within the country of origin (the self-sufficiency principle). The transboundary movements that take place should be on environmental and economic grounds and based upon agreements between the States concerned;

(b) Ratification of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and the expeditious elaboration of related protocols, such as the protocol on liability and compensation, mechanisms and guidelines to facilitate the implementation of the Basel Convention;

(c) Ratification and full implementation by the countries concerned of the Bamako Convention on the Ban on the Import into Africa and the Control of Transboundary Movement of Hazardous Wastes within Africa and the expeditious elaboration of a protocol on liability and compensation;

(d) Elimination of the export of hazardous wastes to countries that, individually or through international agreements, prohibits the import of such wastes, such as, the contracting parties to the Bamako Convention, the fourth Lomé Convention or other relevant conventions, where such prohibition is provided for.

20.8. The following programme areas are included in this chapter:

(a) Promoting the prevention and minimization of hazardous waste;

(b) Promoting and strengthening institutional capacities in hazardous waste management;

(c) Promoting and strengthening international cooperation in the management of transboundary movements of hazardous wastes;

(d) Preventing illegal international traffic in hazardous wastes.

PROGRAMME AREAS

A. Promoting the prevention and minimization of hazardous waste

Basis for action

20.9. Human health and environmental quality are undergoing continuous degradation by the increasing amount of hazardous wastes being produced. There are increasing direct and indirect costs to society and to individual citizens in connection with the generation, handling and disposal of such wastes. It is therefore crucial to enhance knowledge and information on the economics of prevention and management of hazardous wastes, including the impact in relation to the employment and environmental benefits, in order to ensure that the necessary capital investment is made available in development programmes through economic incentives. One of the first priorities in hazardous waste management is minimization, as part of a broader approach to changing industrial processes and consumer patterns through pollution prevention and cleaner production strategies.

20.10. Among the most important factors in these strategies is the recovery of hazardous wastes and their tranformation into useful material. Technology application, modification and development of new low-waste technologies are therefore currently a central focus of hazardous waste minimization.

Objectives

20.11. The objectives of this programme area are:

(a) To reduce the generation of hazardous wastes, to the extent feasible, as part of an integrated cleaner production approach;

(b) To optimize the use of materials by utilizing, where practicable and environmentally sound, the residues from production processes;

(c) To enhance knowledge and information on the economics of prevention and management of hazardous wastes.

20.12. To achieve those objectives, and thereby reduce the impact and cost of industrial development, countries that can afford to adopt the requisite technologies without detriment to their development should establish policies that include:

(a) Integration of cleaner production approaches and hazardous waste minimization in all planning, and the adoption of specific goals;

(b) Promotion of the use of regulatory and market mechanisms;

(c) Establishment of an intermediate goal for the stabilization of the quantity of hazardous waste generated;

(d) Establishment of long-term programmes and policies including targets where appropriate for reducing the amount of hazardous waste produced per unit of manufacture;

(e) Achievement of a qualitative improvement of waste streams, mainly through activities aimed at reducing their hazardous characteristics;

(f) Facilitation of the establishment of cost-effective policies and approaches to hazardous waste prevention and management, taking into consideration the state of development of each country.

Activities

(a) Management-related activities

20.13. The following activities should be undertaken:

(a) Governments should establish or modify standards or purchasing specifications to avoid discrimination against recycled materials, provided that those materials are environmentally sound;

(b) Governments, according to their possibilities and with the help of multilateral cooperation, should provide economic or regulatory incentives, where appropriate, to stimulate industrial innovation towards cleaner production methods, to encourage industry to invest in preventive and/or recycling technologies so as to ensure environmentally sound management of all hazardous wastes, including recyclable wastes, and to encourage waste minimization investments;

(c) Governments should intensify research and development activities on cost-effective alternatives for processes and substances that currently result in the generation of hazardous wastes that pose particular problems for environmentally sound disposal or treatment, the possibility of ultimate phase-out of those substances that present an unreasonable or otherwise unmanageable risk and are toxic, persistent and bio-accumulative to be considered as soon as practicable. Emphasis should be given to alternatives that could be economically accessible to developing countries;

(d) Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations and industries, as appropriate, should support the establishment of domestic facilities to handle hazardous wastes of domestic origin;

(e) Governments of developed countries should promote the transfer of environmentally sound technologies and know-how on clean technologies and low-waste production to developing countries in conformity with chapter 34, which will bring about changes to sustain innovation. Governments should cooperate with industry to develop guidelines and codes of conduct, where appropriate, leading to cleaner production through sectoral trade industry associations;

(f) Governments should encourage industry to treat, recycle, reuse and dispose of wastes at the source of generation, or as close as possible thereto, whenever hazardous waste generation is unavoidable and when it is both economically and environmentally efficient for industry to do so;

(g) Governments should encourage technology assessments, for example through the use of technology assessment centres;

(h) Governments should promote cleaner production through the establishment of centres providing training and information on environmentally sound technologies;

(i) Industry should establish environmental management systems, including environmental auditing of its production or distribution sites, in order to identify where the installation of cleaner production methods is needed;

(j) A relevant and competent United Nations organization should take the lead, in cooperation with other organizations, to develop guidelines for estimating the costs and benefits of various approaches to the adoption of cleaner production and waste minimization and environmentally sound management of hazardous wastes, including rehabilitation of contaminated sites, taking into account, where appropriate, the report of the 1991 Nairobi meeting of government-designated experts on an international strategy and an action programme, including technical guidelines for the environmentally sound management of hazardous wastes; in particular in the context of the work of the Basel Convention, being developed under the UNEP secretariat;

(k) Governments should establish regulations that lay down the ultimate responsibility of industries for environmentally sound disposal of the hazardous wastes their activities generate.

(b) Data and information

20.14. The following activities should be undertaken:

(a) Governments, assisted by international organizations, should establish mechanisms for assessing the value of existing information systems;

(b) Governments should establish nationwide and regional information collection and dissemination clearing-houses and networks that are easy for Government institutions and industry and other non-governmental organizations to access and use;

(c) International organizations, through the UNEP Cleaner Production programme and ICPIC, should extend and strengthen existing systems for collection of cleaner production information;

(d) All United Nations organs and organizations should promote the use and dissemination of information collected through the Cleaner Production network;

(e) OECD should, in cooperation with other organizations, undertake a comprehensive survey of, and disseminate information on, experiences of member countries in adopting economic regulatory schemes and incentive mechanisms for hazardous waste management and for the use of clean technologies that prevent such waste from being generated;

(f) Governments should encourage industries to be transparent in their operations and provide relevant information to the communities that might be affected by the generation, management and disposal of hazardous wastes.

(c) International and regional cooperation and coordination

20.15. International/regional cooperation should encourage the ratification by States of the Basel and Bamako Conventions and promote the implementation of those Conventions. Regional cooperation will be necessary for the development of similar conventions in regions other than Africa, if so required. In addition there is a need for effective coordination of international regional and national policies and instruments. Another activity proposed is cooperating in monitoring the effects of the management of hazardous wastes.

Means of implementation

(a) Financing and cost evaluation

20.16. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $750 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

20.17. The following activities related to technology development and research should be undertaken:

(a) Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, and industries, as appropriate, should significantly increase financial support for cleaner technology research and development programmes, including the use of biotechnologies;

(b) States, with the cooperation of international organizations where appropriate, should encourage industry to promote and undertake research into the phase-out of the processes that pose the greatest environmental risk based on hazardous wastes generated;

(c) States should encourage industry to develop schemes to integrate the cleaner production approach into design of products and management practices;

(d) States should encourage industry to exercise environmentally responsible care through hazardous waste reduction and by ensuring the environmentally sound reuse, recycling and recovery of hazardous wastes, as well as their final disposal.

(c) Human resource development

20.18. The following activities should be undertaken:

(a) Governments, international organizations and industry should encourage industrial training programmes, incorporating hazardous waste prevention and minimization techniques and launching demonstration projects at the local level to develop "success stories" in cleaner production;

(b) Industry should integrate cleaner production principles and case examples into training programmes and establish demonstration projects/networks by sector/country;

(c) All sectors of society should develop cleaner production awareness campaigns and promote dialogue and partnership with industry and other actors.

(d) Capacity-building

20.19. The following activities should be undertaken:

(a) Governments of developing countries, in cooperation with industry and with the cooperation of appropriate international organizations, should develop inventories of hazardous waste production, in order to identify their needs with respect to technology transfer and implementation of measures for the sound management of hazardous wastes and their disposal;

(b) Governments should include in national planning and legislation an integrated approach to environmental protection, driven by prevention and source reduction criteria, taking into account the "polluter pays" principle, and adopt programmes for hazardous waste reduction, including targets and adequate environmental control;

(c) Governments should work with industry on sector-by-sector cleaner production and hazardous waste minimization campaigns, as well as on the reduction of such wastes and other emissions;

(d) Governments should take the lead in establishing and strengthening, as appropriate, national procedures for environmental impact assessment, taking into acount the cradle-to-grave approach to the management of hazardous wastes, in order to identify options for minimizing the generation of hazardous wastes, through safer handling, storage, disposal and destruction;

(e) Governments, in collaboration with industry and appropriate international organizations, should develop procedures for monitoring the application of the cradle to grave approach, including environmental audits;

(f) Bilateral and multilateral development assistance agencies should substantially increase funding for cleaner technology transfer to developing countries, including small- and medium-sized enterprises.

B. Promoting and strengthening institutional capacities in hazardous waste management

Basis for action

20.20. Many countries lack the national capacity to handle and manage hazardous wastes. This is primarily due to inadequate infrastructure, deficiencies in regulatory frameworks, insufficient education and training programmes and lack of coordination between the different ministries and institutions involved in various aspects of waste management. In addition, there is a lack of knowledge about environmental contamination and pollution and the associated health risk from the exposure of populations, especially women and children, and ecosystems to hazardous wastes; assessment of risks; and the characteristics of wastes. Steps need to be taken immediately to identify populations at high risk and to take remedial measures, where necessary. One of the main priorities in ensuring environmentally sound management of hazardous wastes is to provide awareness, education and training programmes covering all levels of society. There is also a need to undertake research programmes to understand the nature of hazardous wastes, to identify their potential environmental effects and to develop technologies to safely handle those wastes. Finally, there is a need to strengthen the capacities of institutions that are responsible for the management of hazardous wastes.

Objectives

20.21. The objectives in this programme area are:

(a) To adopt appropriate coordinating, legislative and regulatory measures at the national level for the environmentally sound management of hazardous wastes, including the implementation of international and regional conventions;

(b) To establish public awareness and information programmes on hazardous waste issues and to ensure that basic education and training programmes are provided for industry and government workers in all countries;

(c) To establish comprehensive research programmes on hazardous wastes in countries;

(d) To strengthen service industries to enable them to handle hazardous wastes, and to build up international networking;

(e) To develop endogenous capacities in all developing countries to educate and train staff at all levels in environmentally sound hazardous waste handling and monitoring and in environmentally sound management;

(f) To promote human exposure assessment with respect to hazardous waste sites and identify the remedial measures required;

(g) To facilitate the assessment of impacts and risks of hazardous wastes on human health and the environment by establishing appropriate procedures, methodologies, criteria and/or effluent-related guidelines and standards;

(h) To improve knowledge regarding the effects of hazardous wastes on uman health and the environment;

(i) To make information available to Governments and to the general ublic on the effects of hazardous wastes, including infectious wastes, on uman health and the environment.

ctivities

a) Management-related activities

0.22. The following activities should be undertaken:

(a) Governments should establish and maintain inventories, including omputerized inventories, of hazardous wastes and their treatment/disposal ites, as well as of contaminated sites that require rehabilitation, and ssess exposure and risk to human health and the environment; they should also dentify the measures required to clean up the disposal sites. Industry hould make the necessary information available;

(b) Governments, industry and international organizations should ollaborate in developing guidelines and easy-to-implement methods for the haracterization and classification of hazardous wastes;

(c) Governments should carry out exposure and health assessments of opulations residing near uncontrolled hazardous waste sites and initiate emedial measures;

(d) International organizations should develop improved health-based riteria, taking into account national decision-making processes, and assist the preparation of practical technical guidelines for the prevention, inimization and safe handling and disposal of hazardous wastes;

(e) Governments of developing countries should encourage terdisciplinary and intersectoral groups, in cooperation with international ganizations and agencies, to implement training and research activities lated to evaluation, prevention and control of hazardous waste health sks. Such groups should serve as models to develop similar regional ogrammes;

(f) Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations as appropriate, should encourage as far as possible the establishment of combined treatment/disposal facilities for hazardous wastes in small- and medium-sized industries;

(g) Governments should promote identification and clean-up of sites of hazardous wastes in collaboration with industry and international organizations. Technologies, expertise and financing should be available for this purpose, as far as possible and when appropriate with the application of the "polluter pays" principle;

(h) Governments should ascertain that their military establishments conform to their nationally applicable environmental norms in the treatment and disposal of hazardous wastes.

(b) Data and information

20.23. The following activities should be undertaken:

(a) Governments, international and regional organizations and industry should facilitate and expand the dissemination of technical and scientific information dealing with the various health aspects of hazardous wastes, and promote its application;

(b) Governments should establish notification systems and registries of exposed populations and of adverse health effects and databases on risk assessments of hazardous wastes;

(c) Governments should endeavour to collect information on those who generate or dispose/recycle hazardous wastes and provide such information to the individuals and institutions concerned.

(c) International and regional cooperation and coordination

20.24. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

(a) Promote and support the integration and operation, at the regional and local levels as appropriate, of institutional and interdisciplinary groups that collaborate, according to their capabilities, in activities oriented towards strengthening risk assessment, risk management and risk reduction with respect to hazardous wastes;

(b) Support capacity-building and technological development and research in developing countries in connection with human resource development, with particular support to be given to consolidating networks;

(c) Encourage self-sufficiency in hazardous waste disposal in the country of origin to the extent environmentally sound and feasible. The transboundary movements that take place should be on environmental and economic grounds and based upon agreements between all States concerned.

Means of implementation

(a) Financing and cost evaluation

20.25. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $18.5 billion on a global basis with about $3.5 billion related to developing countries, including about $500 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

20.26. The following activities should be undertaken:

(a) Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations and industry as appropriate, should increase support for hazardous waste research management in developing countries;

(b) Governments, in collaboration with international organizations, should conduct research on the health effects of hazardous wastes in developing countries, including the long-term effects on children and women;

(c) Governments should conduct research aimed at the needs of small and medium-sized industries;

(d) Governments and international organizations in cooperation with industry should expand technological research on environmentally sound hazardous waste handling, storage, transport, treatment and disposal and on hazardous waste assessment, management and remediation;

(e) International organizations should identify relevant and improved technologies for handling, storage, treatment and disposal of hazardous wastes.

(c) Human resource development

20.27. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations and industry as appropriate, should:

(a) Increase public awareness and information on hazardous waste issues and promote the development and dissemination of hazardous wastes information that the general public can understand;

(b) Increase participation in hazardous waste management programmes by the general public, particularly women, including participation at grass-roots levels;

(c) Develop training and education programmes for men and women in industry and Government aimed at specific real-life problems, for example, planning and implementing hazardous waste minimization programmes, conducting hazardous materials audits and establishing appropriate regulatory programmes;

(d) Promote the training of labour, industrial management and government regulatory staff in developing countries on technologies to minimize and manage hazardous wastes in an environmentally sound manner.

20.28. The following activities should also be undertaken:

(a) Governments, according to their capacities and available resources and with the cooperation of the United Nations, other organizations and non-governmental organizations, should collaborate in developing and disseminating educational materials concerning hazardous wastes and their effects on environment and human health, for use in schools, by women's groups and by the general public;

(b) Governments, according to their capacities and available resources and with the cooperation of the United Nations and other organizations, should establish or strengthen programmes for the environmentally sound management of hazardous wastes in accordance with, as appropriate, health and environmental standards, and extend surveillance systems for the purpose of identifying adverse effects on populations and the environment of exposure to hazardous wastes;

(c) International organizations should provide assistance to member States in assessing the health and environmental risks resulting from exposure to hazardous wastes, and in identifying their priorities for controlling the various categories or classes of wastes;

(d) Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, should promote centres of excellence for training in hazardous waste management, building on appropriate national institutions and encouraging international cooperation, *inter alia*, through institutional links between developed and developing countries.

(d) Capacity-building

20.29. Wherever they operate, transnational corporations and other large-scale enterprises should be encouraged to introduce policies and make commitments to adopt standards of operation with reference to hazardous waste generation and disposal that are equivalent to or no less stringent than standards in the country of origin, and Governments are invited to make efforts to establish regulations requiring environmentally sound management of hazardous wastes.

20.30. International organizations should provide assistance to member States in assessing the health and environmental risks resulting from exposure to hazardous wastes and in identifying their priorities for controlling the various categories or classes of wastes.

20.31. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations and industries, should:

(a) Support national institutions in dealing with hazardous wastes from the regulatory monitoring and enforcement perspectives, with such support including enabling of those institutions to implement international conventions;

(b) Develop industry-based institutions for dealing with hazardous wastes and service industries for handling hazardous wastes;

(c) Adopt technical guidelines for the environmentally sound management of hazardous wastes and support the implementation of regional and international conventions;

(d) Develop and expand international networking among professionals working in the area of hazardous wastes and maintain an information flow among countries;

(e) Assess the feasibility of establishing and operating national, subregional and regional hazardous wastes treatment centres. Such centres could be used for education and training, as well as for facilitation and promotion of the transfer of technologies for the environmentally sound management of hazardous wastes;

(f) Identify and strengthen relevant academic/research institutions or centres for excellence to enable them to carry out education and training activities in the environmentally sound management of hazardous wastes;

(g) Develop a programme for the establishment of national capacities and capabilities to educate and train staff at various levels in hazardous wastes management;

(h) Conduct environmental audits of existing industries to improve in-plant regimes for the management of hazardous wastes.

C. Promoting and strengthening international cooperation in the management of transboundary movements of hazardous wastes

Basis for action

20.32. In order to promote and strengthen international cooperation in the management, including control and monitoring, of transboundary movements of hazardous wastes, a precautionary approach should be applied. There is a need to harmonize the procedures and criteria used in various international and legal instruments. There is also a need to develop or harmonize existing criteria for identifying wastes dangerous to the environment and to build monitoring capacities.

Objectives

20.33. The objectives of this programme area are:

(a) To facilitate and strengthen international cooperation in the environmentally sound management of hazardous wastes, including control and monitoring of transboundary movements of such wastes, including wastes for recovery, by using internationally adopted criteria to identify and classify hazardous wastes and to harmonize relevant international legal instruments;

(b) To adopt a ban on or prohibit, as appropriate, the export of hazardous wastes to countries that do not have the capacity to deal with those wastes in an environmentally sound way or that have banned the import of such wastes;

(c) To promote the development of control procedures for the transboundary movement of hazardous wastes destined for recovery operations under the Basel Convention that encourage environmentally and economically sound recycling options.

Activities

(a) Management-related activities

Strengthening and harmonizing criteria and regulations

20.34. Governments, according to their capacities and available resources and with the cooperation of United Nations and other relevant organizations, as appropriate, should:

(a) Incorporate the notification procedure called for in the Basel Convention and relevant regional conventions, as well as in their annexes, into national legislation;

(b) Formulate, where appropriate, regional agreements such as the Bamako Convention regulating the transboundary movement of hazardous wastes;

(c) Help promote the compatibility and complementarity of such regional agreements with international conventions and protocols;

(d) Strengthen national and regional capacities and capabilities to monitor and control the transboundary movement of hazardous wastes;

(e) Promote the development of clear criteria and guidelines, within the framework of the Basel Convention and regional conventions, as appropriate, for environmentally and economically sound operation in resource recovery, recycling reclamation, direct use or alternative uses and for determination of acceptable recovery practices, including recovery levels where feasible and appropriate, with a view to preventing abuses and false presentation in the above operations;

(f) Consider setting up, at national and regional levels, as appropriate, systems for monitoring and surveillance of the transboundary movements of hazardous wastes;

(g) Develop guidelines for the assessment of environmentally sound treatment of hazardous wastes;

(h) Develop guidelines for the identification of hazardous wastes at the national level, taking into account existing internationally - and, where appropriate, regionally - agreed criteria and prepare a list of hazard profiles for the hazardous wastes listed in national legislation;

(i) Develop and use appropriate methods for testing, characterizing and classifying hazardous wastes and adopt or adapt safety standards and principles for managing hazardous wastes in an environmentally sound way.

Implementing existing agreements

20.35. Governments are urged to ratify the Basel Convention and the Bamako Convention, as applicable, and to pursue the expeditious elaboration of related protocols, such as protocols on liability and compensation, and of mechanisms and guidelines to facilitate the implementation of the Conventions.

Means of implementation

(a) Financing and cost evaluation

20.36. Because this programme area covers a relatively new field of operation and because of the lack so far of adequate studies on costing of activities under this programme, no cost estimate is available at present. However, the costs for some of the activities related to capacity-building that are presented under this programme could be considered to have been covered under the costing of programme area B above.

20.37. The interim secretariat for the Basel Convention should undertake studies in order to arrive at a reasonable cost estimate for activities to be undertaken initially until the year 2000.

(b) Capacity-building

20.38. Governments, according to their capacities and available resources and with the cooperation of United Nations and other relevant organizations, as appropriate, should:

(a) Elaborate or adopt policies for the environmentally sound management of hazardous wastes, taking into account existing international instruments;

(b) Make recommendations to the appropriate forums or establish or adapt norms, including the equitable implementation of the polluter pays principle, and regulatory measures to comply with obligations and principles of the Basel Convention, the Bamako Convention and other relevant existing or future agreements, including protocols, as appropriate, for setting appropriate rules and procedures in the field of liability and compensation for damage resulting from the transboundary movement and disposal of hazardous wastes;

(c) Implement policies for the implementation of a ban or prohibition, as appropriate, of exports of hazardous wastes to countries that do not have the capacity to deal with those wastes in an environmentally sound way or that have banned the import of such wastes;

(d) Study, in the context of the Basel Convention and relevant regional conventions, the feasibility of providing temporary financial assistance in the case of an emergency situation, in order to minimize damage from accidents arising from transboundary movements of hazardous wastes or during the disposal of those wastes.

D. Preventing illegal international traffic in hazardous wastes

Basis for action

20.39. The prevention of illegal traffic in hazardous wastes will benefit the environment and public health in all countries, particularly developing countries. It will also help to make the Basel Convention and regional international instruments, such as the Bamako Convention and the fourth Lomé Convention, more effective by promoting compliance with the controls established in those agreements. Article IX of the Basel Convention specifically addresses the issue of illegal shipments of hazardous wastes. Illegal traffic of hazardous wastes may cause serious threats to human health and the environment and impose a special and abnormal burden on the countries that receive such shipments.

20.40. Effective prevention requires action through effective monitoring and the enforcement and imposition of appropriate penalties.

Objectives

20.41. The objectives of this programme area are:

(a) To reinforce national capacities to detect and halt any illegal attempt to introduce hazardous wastes into the territory of any State in contravention of national legislation and relevant international legal instruments;

(b) To assist all countries, particularly developing countries, in obtaining all appropriate information concerning illegal traffic in hazardous wastes;

(c) To cooperate, within the framework of the Basel Convention, in assisting countries that suffer the consequences of illegal traffic.

Activities

(a) Management-related activities

20.42. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

(a) Adopt, where necessary, and implement legislation to prevent the illegal import and export of hazardous wastes;

(b) Develop appropriate national enforcement programmes to monitor compliance with such legislation, detect and deter violations through appropriate penalties and give special attention to those who are known to have conducted illegal traffic in hazardous wastes and to hazardous wastes that are particularly susceptible to illegal traffic.

(b) Data and information

20.43. Governments should develop as appropriate, an information network and alert system to assist in detecting illegal traffic in hazardous wastes. Local communities and others could be involved in the operation of such a network and system.

20.44. Governments should cooperate in the exchange of information on illegal transboundary movements of hazardous wastes and should make such information available to appropriate United Nations bodies such as UNEP and the regional commissions.

(c) International and regional cooperation

20.45. The regional commissions, in cooperation with and relying upon expert support and advice from UNEP and other relevant bodies of the United Nations system, taking full account of the Basel Convention, shall continue to monitor and assess the illegal traffic in hazardous wastes, including its environmental, economic and health implications, on a continuing basis, drawing upon the results and experience gained in the joint UNEP/ESCAP preliminary assessment of illegal traffic.

20.46. Countries and international organizations, as appropriate, should cooperate to strengthen the institutional and regulatory capacities, in particular of developing countries, in order to prevent the illegal import and export of hazardous wastes.

Chapter 21

ENVIRONMENTALLY SOUND MANAGEMENT OF SOLID WASTES AND SEWAGE-RELATED ISSUES

INTRODUCTION

21.1. This chapter has been incorporated in Agenda 21 in response to General Assembly resolution 44/228, section I, paragraph 3, in which the Assembly affirmed that the Conference should elaborate strategies and measures to halt and reverse the effects of environmental degradation in the context of increased national and international efforts to promote sustainable and environmentally sound development in all countries, and to section I, paragraph 12 (g), of the same resolution, in which the Assembly affirmed that environmentally sound management of wastes was among the environmental issues of major concern in maintaining the quality of the Earth's environment and especially in achieving environmentally sound and sustainable development in all countries.

21.2. Programme areas included in the present chapter of Agenda 21 are closely related to the following programme areas of other chapters of Agenda 21:

(a) Protection of the quality and supply of freshwater resources: application of integrated approaches to the development, management and use of water resources (chapter 18);

(b) Promoting sustainable human settlement development (chapter 7);

(c) Protecting and promoting human health conditions (chapter 6);

(d) Changing consumption patterns (chapter 4).

21.3. Solid wastes, as defined in this chapter, include all domestic refuse and non-hazardous wastes such as commercial and institutional wastes, street sweepings and construction debris. In some countries, the solid wastes management system also handles human wastes such as night-soil, ashes from incinerators, septic tank sludge and sludge from sewage treatment plants. If these wastes manifest hazardous characteristics they should be treated as hazardous wastes.

21.4. Environmentally sound waste management must go beyond the mere safe disposal or recovery of wastes that are generated and seek to address the root cause of the problem by attempting to change unsustainable patterns of production and consumption. This implies the application of the integrated life-cycle management concept, which presents a unique opportunity to reconcile development with environmental protection.

21.5. Accordingly, the framework for requisite action should be founded on a hierarchy of objectives and focused on the four major waste-related programme areas, as follows:

(a) Minimizing wastes;

(b) Maximizing environmentally sound waste reuse and recycling;

(c) Promoting environmentally sound waste disposal and treatment;

(d) Extending waste service coverage.

21.6. The four programme areas are interrelated and mutually supportive and must therefore be integrated in order to provide a comprehensive and environmentally responsive framework for managing municipal solid wastes. The mix and emphasis given to each of the four programme areas will vary according to the local socio-economic and physical conditions, rates of waste generation and waste composition. All sectors of society should participate in all the programme areas.

PROGRAMME AREAS

A. Minimizing wastes

Basis for action

21.7. Unsustainable patterns of production and consumption are increasing the quantities and variety of environmentally persistent wastes at unprecedented rates. The trend could significantly increase the quantities of wastes produced by the end of the century and increase quantities four to fivefold by the year 2025. A preventive waste management approach focused on changes in lifestyles and in production and consumption patterns offers the best chance for reversing current trends.

Objectives

21.8. The objectives in this area are:

(a) To stabilize or reduce the production of wastes destined for final disposal, over an agreed time-frame, by formulating goals based on waste weight, volume and composition and to induce separation to facilitate waste recycling and reuse;

(b) To strengthen procedures for assessing waste quantity and composition changes for the purpose of formulating operational waste minimization policies utilizing economic or other instruments to induce beneficial modifications of production and consumption patterns.

21.9. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

(a) By the year 2000, ensure sufficient national, regional and international capacity to access, process and monitor waste trend information and implement waste minimization policies;

(b) By the year 2000, have in place in all industrialized countries programmes to stabilize or reduce, if practicable, production of wastes destined for final disposal, including per capita wastes (where this concept applies), at the level prevailing at that date; developing countries as well should work towards that goal without jeopardizing their development prospects;

(c) Apply by the year 2000, in all countries, in particular in industrialized countries, programmes to reduce the production of agrochemical wastes, containers and packaging materials, which do not meet hazardous characteristics.

Activities

(a) Management-related activities

21.10. Governments should initiate programmes to achieve sustained minimization of waste generation. Non-governmental organizations and consumer groups should be encouraged to participate in such programmes, which could be drawn up with the cooperation of international organizations, where necessary. These programmes should, wherever possible, build upon existing or planned activities and should:

(a) Develop and strengthen national capacities in research and design of environmentally sound technologies, as well as adopt measures to reduce wastes to a minimum;

(b) Provide for incentives to reduce unsustainable patterns of production and consumption;

(c) Develop, where necessary, national plans to minimize waste generation as part of overall national development plans;

(d) Emphasize waste minimization considerations in procurement within the United Nations system.

(b) Data and information

21.11. Monitoring is a key prerequisite for keeping track of changes in waste quantity and quality and their resultant impact on health and the environment. Governments, with the support of international agencies, should:

(a) Develop and apply methodologies for country-level waste monitoring;

(b) Undertake data gathering and analysis, establish national goals and monitor progress;

(c) Utilize data to assess environmental soundness of national waste policies as a basis for corrective action;

(d) Input information into global information systems.

(c) International and regional cooperation and coordination

21.12. The United Nations and intergovernmental organizations, with the collaboration of Governments, should help promote waste minimization by facilitating greater exchange of information, know-how and experience. The following is a non-exhaustive list of specific activities that could be undertaken:

(a) Identifying, developing and harmonizing methodologies for waste monitoring and transferring such methodologies to countries;

(b) Identifying and further developing the activities of existing information networks on clean technologies and waste minimization;

(c) Undertaking periodic assessment, collating and analysing country data and reporting systematically, in an appropriate United Nations forum, to the countries concerned;

(d) Reviewing the effectiveness of all waste minimization instruments and identifying potential new instruments that could be used and techniques by which they could be made operational at the country level. Guidelines and codes of practice should be developed;

(e) Undertaking research on the social and economic impacts of waste minimization at the consumer level.

Means of implementation

(a) Financing and cost evaluation

21.13. The Conference secretariat suggests that industrialized countries should consider investing in waste minimization the equivalent of about 1 per cent of the expenditures on solid wastes and sewage disposal. At current levels, this would amount to about $6.5 billion annually, including about $1.8 billion related to minimizing municipal solid wastes. Actual amounts would be determined by relevant municipal, provincial and national budget authorities based on local circumstances.

(b) Scientific and technological means

21.14. Waste minimization technologies and procedures will need to be identified and widely disseminated. This work should be coordinated by national Governments, with the cooperation and collaboration of non-governmental organizations, research institutions and appropriate organizations of the United Nations, and could include the following:

(a) Undertaking a continuous review of the effectiveness of all waste minimization instruments and identifying potential new instruments that could be used and techniques by which instruments could be made operational at the country level. Guidelines and codes of practice should be developed;

(b) Promoting waste prevention and minimization as the principal objective of national waste management programmes;

(c) Promoting public education and a range of regulatory and non-regulatory incentives to encourage industry to change product design and reduce industrial process wastes through cleaner production technologies and good housekeeping practices and to encourage industries and consumers to use types of packaging that can be safely reused;

(d) Executing, in accordance with national capacities, demonstration and pilot programmes to optimize waste minimization instruments;

(e) Establishing procedures for adequate transport, storage, conservation and management of agricultural products, foodstuffs and other perishable goods in order to reduce the loss of those products, which results in the production of solid waste;

(f) Facilitating the transfer of waste-reduction technologies to industry, particularly in developing countries, and establishing concrete national standards for effluents and solid waste, taking into account, *inter alia*, raw material use and energy consumption.

(c) Human resource development

21.15. Human resource development for waste minimization not only should be targeted at professionals in the waste management sector but also should seek to obtain the support of citizens and industry. Human resource development programmes must therefore aim to raise consciousness and educate and inform concerned groups and the public in general. Countries should incorporate within school curricula, where appropriate, the principles and practices of preventing and minimizing wastes and material on the environmental impacts of waste.

B. Maximizing environmentally sound waste reuse and recycling

Basis for action

21.16. The exhaustion of traditional disposal sites, stricter environmental controls governing waste disposal and increasing quantities of more persistent wastes, particularly in industrialized countries, have all contributed to a rapid increase in the cost of waste disposal services. Costs could double or triple by the end of the decade. Some current disposal practices pose a threat to the environment. As the economics of waste disposal services change, waste recycling and resource recovery are becoming increasingly cost-effective. Future waste management programmes should take maximum advantage of resource-efficient approaches to the control of wastes. These activities should be carried out in conjunction with public education programmes. It is important that markets for products from reclaimed materials be identified in the development of reuse and recycling programmes.

Objectives

21.17. The objectives in this area are:

(a) To strengthen and increase national waste reuse and recycling systems;

(b) To create a model internal waste reuse and recycling programme for waste streams, including paper, within the United Nations system;

(c) To make available information, techniques and appropriate policy instruments to encourage and make operational waste reuse and recycling schemes.

21.18. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

(a) By the year 2000, promote sufficient financial and technological capacities at the regional, national and local levels, as appropriate, to implement waste reuse and recycling policies and actions;

(b) By the year 2000, in all industrialized countries, and by the year 2010, in all developing countries, have a national programme, including, to the extent possible, targets for efficient waste reuse and recycling.

Activities

(a) Management-related activities

21.19. Governments and institutions and non-governmental organizations, including consumer, women's and youth groups, in collaboration with appropriate organizations of the United Nations system, should launch programmes to demonstrate and make operational enhanced waste reuse and recycling. These programmes should, wherever possible, build upon existing or planned activities and should:

(a) Develop and strengthen national capacity to reuse and recycle an increasing proportion of wastes;

(b) Review and reform national waste policies to provide incentives for waste reuse and recycling;

(c) Develop and implement national plans for waste management that take advantage of, and give priority to, waste reuse and recycling;

(d) Modify existing standards or purchase specifications to avoid discrimination against recycled materials, taking into account the saving in energy and raw materials;

(e) Develop public education and awareness programmes to promote the use of recycled products.

(b) Data and information

21.20. Information and research is required to identify promising socially acceptable and cost-effective forms of waste reuse and recycling relevant to each country. For example, supporting activities undertaken by national and local governments in collaboration with the United Nations and other international organizations could include:

(a) Undertaking an extensive review of options and techniques for reuse and recycling all forms of municipal solid wastes. Policies for reuse and recycling should be made an integral component of national and local waste management programmes;

(b) Assessing the extent and practice of waste reuse and recycling operations currently undertaken and identifying ways by which these could be increased and supported;

(c) Increasing funding for research pilot programmes to test various options for reuse and recycling, including the use of small-scale, cottage-based recycling industries; compost production; treated waste-water irrigation; and energy recovery from wastes;

(d) Producing guidelines and best practices for waste reuse and recycling;

(e) Intensifying efforts, at collecting, analysing and disseminating, to key target groups, relevant information on waste issues. Special research grants could be made available on a competitive basis for innovative research projects on recycling techniques;

(f) Identifying potential markets for recycled products.

(c) International and regional cooperation and coordination

21.21. States, through bilateral and multilateral cooperation, including through the United Nations and other relevant international organizations, as appropriate, should:

(a) Undertake a periodic review of the extent to which countries reuse and recycle their wastes;

(b) Review the effectiveness of techniques for and approaches to waste reuse and recycling and ways of enhancing their application in countries;

(c) Review and update international guidelines for the safe reuse of wastes;

(d) Establish appropriate programmes to support small communities' waste reuse and recycling industries in developing countries.

Means of implementation

(a) Financing and cost evaluation

21.22. The Conference secretariat has estimated that if the equivalent of 1 per cent of waste-related municipal expenditures was devoted to safe waste reuse schemes, worldwide expenditures for this purpose would amount to $8 billion. The secretariat estimates the total annual cost (1993-2000) of implementing the activities of this programme area in developing countries to be about $850 million on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific programmes proposed by international institutions and approved by their governing bodies.

(b) Scientific and technological means

21.23. The transfer of technology should support waste recycling and reuse by the following means:

(a) Including the transfer of recycling technologies, such as machinery for reusing plastics, rubber and paper, within bilateral and multilateral technical cooperation and aid programmes;

(b) Developing and improving existing technologies, especially indigenous technologies, and facilitating their transfer under ongoing regional and interregional technical assistance programmes;

(c) Facilitating the transfer of waste reuse and recycling technology.

21.24. Incentives for waste reuse and recycling are numerous. Countries could consider the following options to encourage industry, institutions, commercial establishments and individuals to recycle wastes instead of disposing of them:

(a) Offering incentives to local and municipal authorities that recycle the maximum proportion of their wastes;

(b) Providing technical assistance to informal waste reuse and recycling operations;

(c) Applying economic and regulatory instruments, including tax incentives, to support the principle that generators of wastes pay for their disposal;

(d) Providing legal and economic conditions conducive to investments in waste reuse and recycling;

(e) Implementing specific mechanisms such as deposit/refund systems as incentives for reuse and recycling;

(f) Promoting the separate collection of recyclable parts of household wastes;

(g) Providing incentives to improve the marketability of technically recyclable waste;

(h) Encouraging the use of recyclable materials, particularly in packaging, where feasible;

(i) Encouraging the development of markets for recycled goods by establishing programmes.

(c) Human resource development

21.25. Training will be required to reorient current waste management practices to include waste reuse and recycling. Governments, in collaboration with United Nations international and regional organizations, should undertake the following indicative list of actions:

(a) Including waste reuse and recycling in in-service training programmes as integral components of technical cooperation programmes on urban management and infrastructure development;

(b) Expanding training programmes on water supply and sanitation to incorporate techniques and policies for waste reuse and recycling;

(c) Including the advantages and civic obligations associated with waste reuse and recycling in school curricula and relevant general educational courses;

(d) Encouraging non-governmental organizations, community-based organizations and women's, youth and public interest group programmes, in collaboration with local municipal authorities, to mobilize community support for waste reuse and recycling through focused community-level campaigns.

(d) Capacity-building

21.26. Capacity-building to support increased waste reuse and recycling should focus on the following areas:

(a) Making operational national policies and incentives for waste management;

(b) Enabling local and municipal authorities to mobilize community support for waste reuse and recycling by involving and assisting informal sector waste reuse and recycling operations and undertaking waste management planning that incorporates resource recovery practices.

C. Promoting environmentally sound waste disposal and treatment

Basis for action

21.27. Even when wastes are minimized, some wastes will still remain. Even after treatment, all discharges of wastes have some residual impact on the receiving environment. Consequently, there is scope for improving waste treatment and disposal practices such as, for example, avoiding the discharge of sludges at sea. In developing countries, the problem is of a more fundamental nature: less than 10 per cent of urban wastes receive some form of treatment and only a small proportion of treatment is in compliance with any acceptable quality standard. Faecal matter treatment and disposal should be accorded due priority given the potential threat of faeces to human health.

Objectives

21.28. The objective in this area is to treat and safely dispose of a progressively increasing proportion of the generated wastes.

21.29. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

(a) By the year 2000, establish waste treatment and disposal quality criteria, objectives and standards based on the nature and assimilative capacity of the receiving environment;

(b) By the year 2000, establish sufficient capacity to undertake waste-related pollution impact monitoring and conduct regular surveillance, including epidemiological surveillance, where appropriate;

(c) By the year 1995, in industrialized countries, and by the year 2005, in developing countries, ensure that at least 50 per cent of all sewage, waste waters and solid wastes are treated or disposed of in conformity with national or international environmental and health quality guidelines;

(d) By the year 2025, dispose of all sewage, waste waters and solid wastes in conformity with national or international environmental quality guidelines.

Activities

(a) Management-related activities

21.30. Governments, institutions and non-governmental organizations, together with industries, in collaboration with appropriate organizations of the United Nations system, should launch programmes to improve the control and management of waste-related pollution. These programmes should, wherever possible, build upon existing or planned activities and should:

(a) Develop and strengthen national capacity to treat and safely dispose of wastes;

(b) Review and reform national waste management policies to gain control over waste-related pollution;

(c) Encourage countries to seek waste disposal solutions within their sovereign territory and as close as possible to the sources of origin that are compatible with environmentally sound and efficient management. In a number of countries, transboundary movements take place to ensure that wastes are managed in an environmentally sound and efficient way. Such movements observe the relevant conventions, including those that apply to areas that are not under national jurisdiction;

(d) Develop human wastes management plans, giving due attention to the development and application of appropriate technologies and the availability of resources for implementation.

(b) Data and information

21.31. Standard setting and monitoring are two key elements essential for gaining control over waste-related pollution. The following specific activities are indicative of the kind of supportive actions that could be taken by international bodies such as the United Nations Centre for Human Settlements (Habitat), the United Nations Environment Programme and the World Health Organization:

(a) Assembling and analysing the scientific evidence and pollution impacts of wastes in the environment in order to formulate and disseminate recommended scientific criteria and guidelines for the environmentally sound management of solid wastes;

(b) Recommending national and, where relevant, local environmental quality standards based on scientific criteria and guidelines;

(c) Including within technical cooperation programmes and agreements the provision for monitoring equipment and for the requisite training in its use;

(d) Establishing an information clearing-house with extensive networks at the regional, national and local levels to collect and disseminate information on all aspects of waste management, including safe disposal.

(c) International and regional cooperation and coordination

21.32. States, through bilateral and multilateral cooperation, including through the United Nations and other relevant international organizations, as appropriate, should:

(a) Identify, develop and harmonize methodologies and environmental quality and health guidelines for safe waste discharge and disposal;

(b) Review and keep abreast of developments and disseminate information on the effectiveness of techniques and approaches to safe waste disposal and ways of supporting their application in countries.

Means of implementation

(a) Financing and cost evaluation

21.33. Safe waste disposal programmes are relevant to both developed and developing countries. In developed countries the focus is on improving facilities to meet higher environmental quality criteria, while in developing countries considerable investment is required to build new treatment facilities.

21.34. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme in developing countries to be about $15 billion, including about $3.4 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

21.35. Scientific guidelines and research on various aspects of waste-related pollution control will be crucial for achieving the objectives of this programme. Governments, municipalities and local authorities, with appropriate international cooperation, should:

(a) Prepare guidelines and technical reports on subjects such as the integration of land-use planning in human settlements with waste disposal, environmental quality criteria and standards, waste treatment and safe disposal options, industrial waste treatment and landfill operations;

(b) Undertake research on critical subjects such as low-cost, low-maintenance waste-water treatment systems; safe sludge disposal options; industrial waste treatment; and low-technology, ecologically safe waste disposal options;

(c) Transfer technologies, in conformity with the terms as well as the provisions of chapter 34 (Transfer of environmentally sound technology, cooperation and capacity-building), on industrial waste treatment processes through bilateral nad multilateral technical cooperation programmes and in cooperation with business and industry, including large and transnational corporations, as appropriate;

(d) Focus on the rehabilitation, operation and maintenance of existing facilities and technical assistance on improved maintenance practices and techniques followed by the planning and construction of waste treatment facilities;

(e) Establish programmes to maximize the source segregation and safe disposal of the hazardous components of municipal solid waste;

(f) Ensure the investment and provision of waste collection facilities with the concomitant provision of water services and with an equal and parallel investment and provision of waste treatment facilities.

(c) Human resource development

21.36. Training would be required to improve current waste management practices to include safe collection and waste disposal. The following is an indicative list of actions that should be taken by Governments, in collaboration with international organizations:

(a) Providing both formal and in-service training, focused on pollution control, waste treatment and disposal technologies, and operating and maintaining waste-related infrastructure. Intercountry staff exchange programmes should also be established;

(b) Undertaking the requisite training for waste-related pollution monitoring and control enforcement.

(d) Capacity-building

21.37. Institutional reforms and capacity-building will be indispensable if countries are to be able to quantify and mitigate waste-related pollution. Activities to achieve this objective should include:

(a) Creating and strengthening independent environmental control bodies at the national and local levels. International organizations and donors should support needed upgrading of manpower skills and provision of equipment;

(b) Empowering of pollution control agencies with the requisite legal mandate and financial capacities to carry out their duties effectively.

D. Extending waste service coverage

Basis for action

21.38. By the end of the century, over 2.0 billion people will be without access to basic sanitation, and an estimated half of the urban population in developing countries will be without adequate solid waste disposal services. As many as 5.2 million people, including 4 million children under five years of age, die each year from waste-related diseases. The health impacts are particularly severe for the urban poor. The health and environmental impacts of inadequate waste management, however, go beyond the unserved settlements themselves and result in water, land and air contamination and pollution over a wider area. Extending and improving waste collection and safe disposal services are crucial to gaining control over this form of pollution.

Objectives

21.39. The overall objective of this programme is to provide health-protecting, environmentally safe waste collection and disposal services to all people. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

(a) By the year 2000, have the necessary technical, financial and human resource capacity to provide waste collection services commensurate with needs;

(b) By the year 2025, provide all urban populations with adequate waste services;

(c) By the year 2025, ensure that full urban waste service coverage is maintained and sanitation coverage achieved in all rural areas.

Activities

(a) Management-related activities

21.40. Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

(a) Establish financing mechanisms for waste management service development in deprived areas, including appropriate modes of revenue generation;

(b) Apply the "polluter pays" principle, where appropriate, by setting waste management charges at rates that reflect the costs of providing the service and ensure that those who generate the wastes pay the full cost of disposal in an environmentally safe way;

(c) Encourage institutionalization of communities' participation in planning and implementation procedures for solid waste management.

(b) Data and information

21.41. Governments, in collaboration with the United Nations and international organizations, should undertake the following:

(a) Developing and applying methodologies for waste monitoring;

(b) Data gathering and analysis to establish goals and monitor progress;

(c) Inputting information into a global information system building upon existing systems;

(d) Strengthening the activities of existing information networks in order to disseminate focused information on the application of innovative and low-cost alternatives for waste disposal to targeted audiences.

(c) International and regional cooperation and coordination

21.42. Many United Nations and bilateral programmes exist that seek to provide water supply and sanitation services to the unserved. The Water and Sanitation Collaborative Council, a global forum, currently acts to coordinate development and encourage cooperation. Even so, given the ever-increasing numbers of unserved urban poor populations and the need to address, in addition, the problem of solid waste disposal, additional mechanisms are essential to ensure accelerated coverage of urban waste disposal services. The international community in general and selected United Nations organizations in particular should:

(a) Launch a settlement infrastructure and environment programme following the United Nations Conference on Environment and Development to coordinate the activities of all organizations of the United Nations system involved in this area and include a clearing-house for information dissemination on all waste management issues;

(b) Undertake and systematically report on progress in providing waste services to those without such services;

(c) Review the effectiveness of techniques for and approaches to increasing coverage and identify innovative ways of accelerating the process.

Means of implementation

(a) Financing and cost evaluation

21.43. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $7.5 billion, including about $2.6 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

21.44. Governments and institutions, together with non-governmental organizations, should, in collaboration with appropriate organizations of the United Nations system, launch programmes in different parts of the developing world to extend waste services to the unserved populations. These programmes should, wherever possible, build upon and reorient existing or planned activities.

21.45. Policy changes at the national and local levels could enhance the rate of waste service coverage extension. These changes should include the following:

(a) Giving full recognition to and using the full range of low-cost options for waste management, including, where appropriate, their institutionalization and incorporation within codes of practice and regulation;

(b) Assigning high priority to the extension of waste management services, as necessary and appropriate, to all settlements irrespective of their legal status, giving due emphasis to meeting the waste disposal needs of the unserved, especially the unserved urban poor;

(c) Integrating the provision and maintenance of waste management services with other basic services such as water-supply and storm-water drainage.

21.46. Research activities could be enhanced. Countries, in cooperation with appropriate international organizations and non-governmental organizations, should, for instance:

(a) Find solutions and equipment for managing wastes in areas of concentrated populations and on small islands. In particular, there is a need for appropriate refuse storage and collection systems and cost-effective and hygienic human waste disposal options;

(b) Prepare and disseminate guidelines, case-studies, policy reviews and technical reports on appropriate solutions and modes of service delivery to unserved low-income areas;

(c) Launch campaigns to encourage active community participation involving women's and youth groups in the management of waste, particularly household waste;

(d) Promote intercountry transfer of relevant technologies, especially technologies for high-density settlements.

(c) Human resource development

21.47. International organizations and national and local Governments, in collaboration with non-governmental organizations, should provide focused training on low-cost waste collection and disposal options, particularly techniques for their planning and delivery. Intercountry staff exchange programmes among developing countries could form part of such training. Particular attention should be given to upgrading the status and skills of management-level personnel in waste management agencies.

21.48. Improvements in management techniques are likely to yield the greatest returns in terms of improving waste management service efficiency. The United Nations, international organizations and financial institutions should, in collaboration with national and local Governments, develop and render operational management information systems for municipal record keeping and accounting and for efficiency and effectiveness assessment.

(d) Capacity-building

21.49. Governments, institutions and non-governmental organizations, with the collaboration of appropriate organizations of the United Nations system, should develop capacities to implement programmes to provide waste collection and disposal services to the unserved populations. Some activities under the programmes should include the following:

(a) Establishing a special unit within current institutional arrangements to plan and deliver services to the unserved poor communities, with their involvement and participation;

(b) Making revisions to existing codes and regulations to permit the use of the full range of low-cost alternative technologies for waste disposal;

(c) Building institutional capacity and developing procedures for undertaking service planning and delivery.

Chapter 22

SAFE AND ENVIRONMENTALLY SOUND MANAGEMENT OF RADIOACTIVE WASTES

PROGRAMME AREA

Promoting the safe and environmentally sound management of radioactive wastes

Basis for action

22.1. Radioactive wastes are generated in the nuclear fuel cycle as well as in nuclear applications (the use of radionuclides in medicine, research and industry). The radiological and safety risk from radioactive wastes varies from very low in short-lived, low-level wastes up to very large for high-level wastes. Annually about 200,000 m^3 of low-level and intermediate-level waste and 10,000 m^3 of high-level waste (as well as spent nuclear fuel destined for final disposal) is generated world wide from nuclear power production. These volumes are increasing as more nuclear power units are taken into operation, nuclear facilities are decommissioned and the use of radionuclides increases. The high-level waste contains about 99 per cent of the radionuclides and thus represents the largest radiological risk. The waste volumes from nuclear applications are generally much smaller, typically some tens of cubic metres or less per year and country. However, the activity concentration, especially in sealed radiation sources, might be high, thus justifying very stringent radiological protection measures. The growth of waste volumes should continue to be kept under close review.

22.2. The safe and environmentally sound management of radioactive wastes, including their minimization, transportation and disposal, is important, given their characteristics. In most countries with a substantial nuclear power programme, technical and administrative measures have been taken to implement a waste management system. In many other countries still only in preparation for a national nuclear programme or having only nuclear applications, such systems are still needed.

Objective

22.3. The objective of this programme area is to ensure that radioactive wastes are safely managed, transported, stored and disposed of, with a view to protecting human health and the environment, within a wider framework of an interactive and integrated approach to radioactive waste management and safety.

Activities

(a) Management-related activities

22.4. States, in cooperation with relevant international organizations, where appropriate, should:

(a) Promote policies and practical measures to minimize and limit, where appropriate, the generation of radioactive wastes and provide for their safe processing, conditioning, transportation and disposal;

(b) Support efforts within IAEA to develop and promulgate radioactive waste safety standards or guidelines and codes of practice as an internationally accepted basis for the safe and environmentally sound management and disposal of radioactive wastes;

(c) Promote safe storage, transportation and disposal of radioactive wastes, as well as spent radiation sources and spent fuel from nuclear reactors destined for final disposal, in all countries, in particular in developing countries, by facilitating the transfer of relevant technologies to those countries and/or the return to the supplier of radiation sources after their use, in accordance with relevant international regulations or guidelines;

(d) Promote proper planning, including environmental impact assessment where appropriate, of safe and environmentally sound management of radioactive waste, including emergency procedures, storage, transportation and disposal, prior to and after activities that generate such waste.

(b) International and regional cooperation and coordination

22.5. States, in cooperation with relevant international organizations, where appropriate, should:

(a) Strengthen their efforts to implement the Code of Practice on the Transboundary Movements of Radioactive Waste and, under the auspices of IAEA, in cooperation with relevant international organizations dealing with different modes of transport, keep the question of such movements under active review, including the desirability of concluding a legally binding instrument;

(b) Encourage the London Dumping Convention to expedite work to complete studies on replacing the current voluntary moratorium on disposal of low-level radioactive wastes at sea by a ban, taking into account the precautionary approach, with a view to taking a well informed and timely decision on the issue;

(c) Not promote or allow the storage or disposal of high-level, intermediate-level and low-level radioactive wastes near the marine environment unless they determine that scientific evidence, consistent with the applicable internationally agreed principles and guidelines, shows that such storage or disposal poses no unacceptable risk to people and the marine environment or does not interfere with other legitimate uses of the sea, making, in the process of consideration, appropriate use of the concept of the precautionary approach;

(d) Not export radioactive wastes to countries that, individually or through international agreements, prohibit the import of such wastes, such as the contracting parties to the Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement of Hazardous Wastes within Africa, the fourth Lomé Convention or other relevant conventions, where such prohibition is provided for;

(e) Respect, in accordance with international law, the decisions, as far as applicable to them, taken by parties to other relevant regional environmental conventions dealing with other aspects of safe and environmentally sound management of radioactive wastes.

Means of implementation

(a) Financing and cost evaluation

22.6. The costs at the national level of managing and disposing of radioactive wastes are considerable and will vary, depending on the technology used for disposal.

22.7. The Conference secretariat has estimated the average total annual cost (1993-2000) to international organizations to implement the activities of this programme to be about $8 million. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

22.8. States, in cooperation with international organizations, where appropriate, should:

(a) Promote research and development of methods for the safe and environmentally sound treatment, processing and disposal, including deep geological disposal, of high-level radioactive waste;

(b) Conduct research and assessment programmes concerned with evaluating the health and environmental impact of radioactive waste disposal.

(c) Capacity-building, including human resource development

22.9. States, in cooperation with relevant international organizations, should provide, as appropriate, assistance to developing countries to establish and/or strengthen radioactive waste management infrastructures, including legislation, organizations, trained manpower and facilities for the handling, processing, storage and disposal of wastes generated from nuclear applications.

SECTION III. STRENGTHENING THE ROLE OF MAJOR GROUPS

Chapter 23

PREAMBLE

23.1. Critical to the effective implementation of the objectives, policies and mechanisms agreed to by Governments in all programme areas of Agenda 21 will be the commitment and genuine involvement of all social groups.

23.2. One of the fundamental prerequisites for the achievement of sustainable development is broad public participation in decision-making. Furthermore, in the more specific context of environment and development, the need for new forms of participation has emerged. This includes the need of individuals, groups and organizations to participate in environmental impact assessment procedures and to know about and participate in decisions, particularly those which potentially affect the communities in which they live and work. Individuals, groups and organizations should have access to information relevant to environment and development held by national authorities, including information on products and activities that have or are likely to have a significant impact on the environment, and information on environmental protection measures.

23.3. Any policies, definitions or rules affecting access to and participation by non-governmental organizations in the work of United Nations institutions or agencies associated with the implementation of Agenda 21 must apply equally to all major groups.

23.4. The programme areas set out below address the means for moving towards real social partnership in support of common efforts for sustainable development.

Chapter 24

GLOBAL ACTION FOR WOMEN TOWARDS SUSTAINABLE AND EQUITABLE DEVELOPMENT

PROGRAMME AREA

Basis for action

24.1. The international community has endorsed several plans of action and conventions for the full, equal and beneficial integration of women in all development activities, in particular the Nairobi Forward-looking Strategies for the Advancement of Women, 1/ which emphasize women's participation in national and international ecosystem management and control of environment degradation. Several conventions, including the Convention on the Elimination of All Forms of Discrimination against Women (General Assembly resolution 34/180, annex) and conventions of ILO and UNESCO have also been adopted to end gender-based discrimination and ensure women access to land and other resources, education and safe and equal employment. Also relevant are the 1990 World Declaration on the Survival, Protection and Development of Children and the Plan of Action for implementing the Declaration (A/45/625, annex). Effective implementation of these programmes will depend on the active involvement of women in economic and political decision-making and will be critical to the successful implementation of Agenda 21.

Objectives

24.2. The following objectives are proposed for national Governments:

(a) To implement the Nairobi Forward-looking Strategies for the Advancement of Women, particularly with regard to women's participation in national ecosystem management and control of environment degradation;

(b) To increase the proportion of women decision makers, planners, technical advisers, managers and extension workers in environment and development fields;

(c) To consider developing and issuing by the year 2000 a strategy of changes necessary to eliminate constitutional, legal, administrative, cultural, behavioural, social and economic obstacles to women's full participation in sustainable development and in public life;

(d) To establish by the year 1995 mechanisms at the national, regional and international levels to assess the implementation and impact of development and environment policies and programmes on women and to ensure their contributions and benefits;

(e) To assess, review, revise and implement, where appropriate, curricula and other educational material, with a view to promoting the dissemination to both men and women of gender-relevant knowledge and valuation of women's roles through formal and non-formal education, as well as through training institutions, in collaboration with non-governmental organizations;

(f) To formulate and implement clear governmental policies and national guidelines, strategies and plans for the achievement of equality in all aspects of society, including the promotion of women's literacy, education, training, nutrition and health and their participation in key decision-making positions and in management of the environment, particularly as it pertains to their access to resources, by facilitating better access to all forms of credit, particularly in the informal sector, taking measures towards ensuring women's access to property rights as well as agricultural inputs and implements;

(g) To implement, as a matter of urgency, in accordance with country-specific conditions, measures to ensure that women and men have the same right to decide freely and responsibly the number and spacing of their children and have access to information, education and means, as appropriate, to enable them to exercise this right in keeping with their freedom, dignity and personally held values;

(h) To consider adopting, strengthening and enforcing legislation prohibiting violence against women and to take all necessary administrative, social and educational measures to eliminate violence against women in all its forms.

Activities

24.3. Governments should take active steps to implement the following:

(a) Measures to review policies and establish plans to increase the proportion of women involved as decision makers, planners, managers, scientists and technical advisers in the design, development and implementation of policies and programmes for sustainable development;

(b) Measures to strengthen and empower women's bureaux, women's non-governmental organizations and women's groups in enhancing capacity-building for sustainable development;

(c) Measures to eliminate illiteracy among females and to expand the enrolment of women and girls in educational institutions, to promote the goal of universal access to primary and secondary education for girl children and for women, and to increase educational and training opportunities for women and girls in sciences and technology, particularly at the post-secondary level;

(d) Programmes to promote the reduction of the heavy workload of women and girl children at home and outside through the establishment of more and affordable nurseries and kindergartens by Governments, local authorities, employers and other relevant organizations and the sharing of household tasks by men and women on an equal basis, and to promote the provision of environmentally sound technologies which have been designed, developed and improved in consultation with women, accessible and clean water, an efficient fuel supply and adequate sanitation facilities;

(e) Programmes to establish and strengthen preventive and curative health facilities, which include women-centred, women-managed, safe and effective reproductive health care and affordable, accessible, responsible planning of family size and services, as appropriate, in keeping with freedom, dignity and personally held values. Programmes should focus on providing comprehensive health care, including pre-natal care, education and information on health and responsible parenthood, and should provide the opportunity for all women to fully breastfeed at least during the first four months post-partum. Programmes should fully support women's productive and reproductive roles and well-being and should pay special attention to the need to provide equal and improved health care for all children and to reduce the risk of maternal and child mortality and sickness;

(f) Programmes to support and strengthen equal employment opportunities and equitable remuneration for women in the formal and informal sectors with adequate economic, political and social support systems and services, including child care, particularly day-care facilities and parental leave, and equal access to credit, land and other natural resources;

(g) Programmes to establish rural banking systems with a view to facilitating and increasing rural women's access to credit and to agricultural inputs and implements;

(h) Programmes to develop consumer awareness and the active participation of women, emphasizing their crucial role in achieving changes necessary to reduce or eliminate unsustainable patterns of consumption and production, particularly in industrialized countries, in order to encourage investment in environmentally sound productive activities and induce environmentally and socially friendly industrial development;

(i) Programmes to eliminate persistent negative images, stereotypes, attitudes and prejudices against women through changes in socialization patterns, the media, advertising, and formal and non-formal education;

(j) Measures to review progress made in these areas, including the preparation of a review and appraisal report which includes recommendations to be submitted to the 1995 world conference on women.

24.4. Governments are urged to ratify all relevant conventions pertaining to women if they have not already done so. Those that have ratified conventions should enforce and establish legal, constitutional and administrative procedures to transform agreed rights into domestic legislation and should adopt measures to implement them in order to strengthen the legal capacity of women for full and equal participation in issues and decisions on sustainable development.

24.5. States parties to the Convention on the Elimination of All Forms of Discrimination against Women should review and suggest amendments to it by the year 2000, with a view to strengthening those elements of the Convention related to environment and development, giving special attention to the issue of access and entitlements to natural resources, technology, creative banking facilities and low-cost housing, and the control of pollution and toxicity in the home and workplace. States parties should also clarify the extent of the Convention's scope with respect to the issues of environment and development and request the Committee on the Elimination of Discrimination against Women to develop guidelines regarding the nature of reporting such issues, required under particular articles of the Convention.

(a) Areas requiring urgent action

24.6. Countries should take urgent measures to avert the ongoing rapid environmental and economic degradation in developing countries that generally affects the lives of women and children in rural areas suffering drought, desertification and deforestation, armed hostilities, natural disasters, toxic waste and the aftermath of the use of unsuitable agro-chemical products.

24.7. In order to reach these goals, women should be fully involved in decision-making and in the implementation of sustainable development activities.

(b) Research, data collection and dissemination of information

24.8. Countries should develop gender-sensitive databases, information systems and participatory action-oriented research and policy analyses with the collaboration of academic institutions and local women researchers on the following:

(a) Knowledge and experience on the part of women of the management and conservation of natural resources for incorporation in the databases and information systems for sustainable development;

(b) The impact of structural adjustment programmes on women. In research done on structural adjustment programmes, special attention should be given to the differential impact of those programmes on women, especially in terms of cut-backs in social services, education and health and in the removal of subsidies on food and fuel;

(c) The impact on women of environmental degradation, particularly drought, desertification, toxic chemicals and armed hostilities;

(d) Analysis of the structural linkages between gender relations, environment and development;

(e) The integration of the value of unpaid work, including work that is currently designated "domestic", in resource accounting mechanisms in order better to represent the true value of the contribution of women to the economy, using revised guidelines for the United Nations System of National Accounts, to be issued in 1993;

(f) Measures to develop and include environmental, social and gender impact analyses as an essential step in the development and monitoring of programmes and policies;

(g) Programmes to create rural and urban training, research and resource centres in developing and developed countries that will serve to disseminate environmentally sound technologies to women.

(c) International and regional cooperation and coordination

24.9. The Secretary-General of the United Nations should review the adequacy of all United Nations institutions, including those with a special focus on the role of women, in meeting development and environment objectives, and make recommendations for strengthening their capacities. Institutions that require special attention in this area include the Division for the Advancement of Women (Centre for Social Development and Humanitarian Affairs, United Nations Office at Vienna), the United Nations Development Fund for Women (UNIFEM), the International Research and Training Institute for the Advancement of Women (INSTRAW) and the women's programmes of regional commissions. The review should consider how the environment and development programmes of each body of the United Nations system could be strengthened to implement Agenda 21 and how to incorporate the role of women in programmes and decisions related to sustainable development.

24.10. Each body of the United Nations system should review the number of women in senior policy-level and decision-making posts and, where appropriate, adopt programmes to increase that number, in accordance with Economic and Social Council resolution 1991/17 on the improvement of the status of women in the Secretariat.

24.11. UNIFEM should establish regular consultations with donors in collaboration with UNICEF, with a view to promoting operational programmes and projects on sustainable development that will strengthen the participation of women, especially low-income women, in sustainable development and in decision-making. UNDP should establish a women's focal point on development and environment in each of its resident representative offices to provide information and promote exchange of experience and information in these fields. Bodies of the United Nations system, governments and non-governmental organizations involved in the follow-up to the Conference and the implementation of Agenda 21 should ensure that gender considerations are fully integrated into all the policies, programmes and activities.

Means of implementation

Financing and cost evaluation

24.12. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this chapter to be about $40 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

Notes

1/ *Report of the World Conference to Review and Appraise the Achievements of the United Nations Decade for Women: Equality, Development and Peace, Nairobi, 15-26 July 1985* (United Nations publication, Sales No. E.85.IV.10), chap. I, sect. A.

Chapter 25

CHILDREN AND YOUTH IN SUSTAINABLE DEVELOPMENT

INTRODUCTION

25.1. Youth comprise nearly 30 per cent of the world's population. The involvement of today's youth in environment and development decision-making and in the implementation of programmes is critical to the long-term success of Agenda 21.

PROGRAMME AREAS

A. Advancing the role of youth and actively involving them in the protection of the environment and the promotion of economic and social development

Basis for action

25.2. It is imperative that youth from all parts of the world participate actively in all relevant levels of decision-making processes because it affects their lives today and has implications for their futures. In addition to their intellectual contribution and their ability to mobilize support, they bring unique perspectives that need to be taken into account.

25.3. Numerous actions and recommendations within the international community have been proposed to ensure that youth are provided a secure and healthy future, including an environment of quality, improved standards of living and access to education and employment. These issues need to be addressed in development planning.

Objectives

25.4. Each country should, in consultation with its youth communities, establish a process to promote dialogue between the youth community and Government at all levels and to establish mechanisms that permit youth access to information and provide them with the opportunity to present their perspectives on government decisions, including the implementation of Agenda 21.

25.5. Each country, by the year 2000, should ensure that more than 50 per cent of its youth, gender balanced, are enrolled in or have access to appropriate secondary education or equivalent educational or vocational training programmes by increasing participation and access rates on an annual basis.

25.6. Each country should undertake initiatives aimed at reducing current levels of youth unemployment, particularly where they are disproportionately high in comparison to the overall unemployment rate.

25.7. Each country and the United Nations should support the promotion and creation of mechanisms to involve youth representation in all United Nations processes in order to influence those processes.

25.8. Each country should combat human rights abuses against young people, particularly young women and girls, and should consider providing all youth with legal protection, skills, opportunities and the support necessary for them to fulfil their personal, economic and social aspirations and potentials.

Activities

25.9. Governments, according to their strategies, should take measures to:

(a) Establish procedures allowing for consultation and possible participation of youth of both genders, by 1993, in decision-making processes with regard to the environment, involving youth at the local, national and regional levels;

(b) Promote dialogue with youth organizations regarding the drafting and evaluation of environment plans and programmes or questions on development;

(c) Consider for incorporation into relevant policies the recommendations of international, regional and local youth conferences and other forums that offer youth perspectives on social and economic development and resource management;

(d) Ensure access for all youth to all types of education, wherever appropriate, providing alternative learning structures, ensure that education reflects the economic and social needs of youth and incorporates the concepts of environmental awareness and sustainable development throughout the curricula; and expand vocational training, implementing innovative methods aimed at increasing practical skills, such as environmental scouting;

(e) In cooperation with relevant ministries and organizations, including representatives of youth, develop and implement strategies for creating alternative employment opportunities and provide required training to young men and women;

(f) Establish task forces that include youth and youth non-governmental organizations to develop educational and awareness programmes specifically targeted to the youth population on critical issues pertaining to youth. These task forces should use formal and non-formal educational methods to reach a maximum audience. National and local media, non-governmental organizations, businesses and other organizations should assist in these task forces;

(g) Give support to programmes, projects, networks, national organizations and youth non-governmental organizations to examine the integration of programmes in relation to their project requirements, encouraging the involvement of youth in project identification, design, implementation and follow-up;

(h) Include youth representatives in their delegations to international meetings, in accordance with the relevant General Assembly resolutions adopted in 1968, 1977, 1985 and 1989.

25.10. The United Nations and international organizations with youth programmes should take measures to:

(a) Review their youth programmes and consider how coordination between them can be enhanced;

(b) Improve the dissemination of relevant information to Governments, youth organizations and other non-governmental organizations on current youth positions and activities, and monitor and evaluate the application of Agenda 21;

(c) Promote the United Nations Trust Fund for the International Youth Year and collaborate with youth representatives in the administration of it, focusing particularly on the needs of youth from developing countries.

Means of implementation

Financing and cost evaluation

25.11. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.5 million on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

B. Children in sustainable development

Basis for action

25.12. Children not only will inherit the responsibility of looking after the Earth, but in many developing countries they comprise nearly half the population. Furthermore, children in both developing and industrialized countries are highly vulnerable to the effects of environmental degradation. They are also highly aware supporters of environmental thinking. The specific interests of children need to be taken fully into account in the participatory process on environment and development in order to safeguard the future sustainability of any actions taken to improve the environment.

Objectives

25.13. National Governments, according to their policies, should take measures to:

(a) Ensure the survival, protection and development of children, in accordance with the goals endorsed by the 1990 World Summit for Children (A/45/625, annex);

(b) Ensure that the interests of children are taken fully into account in the participatory process for sustainable development and environmental improvement.

Activities

25.14. Governments should take active steps to:

(a) Implement programmes for children designed to reach the child-related goals of the 1990s in the areas of environment and development, especially health, nutrition, education, literacy and poverty alleviation;

(b) Ratify the Convention on the Rights of the Child (General Assembly resolution 44/25 of 20 November 1989, annex), at the earliest moment and implement it by addressing the basic needs of youth and children;

(c) Promote primary environmental care activities that address the basic needs of communities, improve the environment for children at the household and community level and encourage the participation and empowerment of local populations, including women, youth, children and indigenous people, towards the objective of integrated community management of resources, especially in developing countries;

(d) Expand educational opportunities for children and youth, including education for environmental and developmental responsibility, with overriding attention to the education of the girl child;

(e) Mobilize communities through schools and local health centres so that children and their parents become effective focal points for sensitization of communities to environmental issues;

(f) Establish procedures to incorporate children's concerns into all relevant policies and strategies for environment and development at the local, regional and national levels, including those concerning allocation of and entitlement to natural resources, housing and recreation needs, and control of pollution and toxicity in both rural and urban areas.

25.15. International and regional organizations should cooperate and coordinate in the proposed areas. UNICEF should maintain cooperation and collaboration with other organizations of the United Nations, Governments and non-governmental organizations to develop programmes for children and programmes to mobilize children in the activities outlined above.

Means of implementation

(a) Financing and cost evaluation

25.16. Financing requirements for most of the activities are included in estimates for other programmes.

(b) Human resource development and capacity-building

25.17. The activities should facilitate capacity-building and training activities already contained in other chapters of Agenda 21.

Chapter 26

RECOGNIZING AND STRENGTHENING THE ROLE OF INDIGENOUS PEOPLE AND THEIR COMMUNITIES

PROGRAMME AREA

Basis for action

26.1. Indigenous people and their communities have an historical relationship with their lands and are generally descendants of the original inhabitants of such lands. In the context of this chapter the term "lands" is understood to include the environment of the areas which the people concerned traditionally occupy. Indigenous people and their communities represent a significant percentage of the global population. They have developed over many generations a holistic traditional scientific knowledge of their lands, natural resources and environment. Indigenous people and their communities shall enjoy the full measure of human rights and fundamental freedoms without hindrance or discrimination. Their ability to participate fully in sustainable development practices on their lands has tended to be limited as a result of factors of an economic, social and historical nature. In view of the interrelationship between the natural environment and its sustainable development and the cultural, social, economic and physical well-being of indigenous people, national and international efforts to implement environmentally sound and sustainable development should recognize, accommodate, promote and strengthen the role of indigenous people and their communities.

26.2. Some of the goals inherent in the objectives and activities of this programme area are already contained in such international legal instruments as the ILO Indigenous and Tribal Peoples Convention (No. 169) and are being incorporated into the draft universal declaration on indigenous rights, being prepared by the United Nations working group on indigenous populations. The International Year for the World's Indigenous People (1993), proclaimed by the General Assembly in its resolution 45/164 of 18 December 1990, presents a timely opportunity to mobilize further international technical and financial cooperation.

Objectives

26.3. In full partnership with indigenous people and their communities, Governments and, where appropriate, intergovernmental organizations should aim at fulfilling the following objectives:

(a) Establishment of a process to empower indigenous people and their communities through measures that include:

(i) Adoption or strengthening of appropriate policies and/or legal instruments at the national level;

(ii) Recognition that the lands of indigenous people and their communities should be protected from activities that are environmentally unsound or that the indigenous people concerned consider to be socially and culturally inappropriate;

(iii) Recognition of their values, traditional knowledge and resource management practices with a view to promoting environmentally sound and sustainable development;

(iv) Recognition that traditional and direct dependence on renewable resources and ecosystems, including sustainable harvesting, continues to be essential to the cultural, economic and physical well-being of indigenous people and their communities;

(v) Development and strengthening of national dispute-resolution arrangements in relation to settlement of land and resource-management concerns;

(vi) Support for alternative environmentally sound means of production to ensure a range of choices on how to improve their quality of life so that they effectively participate in sustainable development;

(vii) Enhancement of capacity-building for indigenous communities, based on the adaptation and exchange of traditional experience, knowledge and resource-management practices, to ensure their sustainable development;

(b) Establishment, where appropriate, of arrangements to strengthen the active participation of indigenous people and their communities in the national formulation of policies, laws and programmes relating to resource management and other development processes that may affect them, and their initiation of proposals for such policies and programmes;

(c) Involvement of indigenous people and their communities at the national and local levels in resource management and conservation strategies and other relevant programmes established to support and review sustainable development strategies, such as those suggested in other programme areas of Agenda 21.

Activities

26.4. Some indigenous people and their communities may require, in accordance with national legislation, greater control over their lands, self-management of their resources, participation in development decisions affecting them, including, where appropriate, participation in the establishment or management of protected areas. The following are some of the specific measures which Governments could take:

(a) Consider the ratification and application of existing international conventions relevant to indigenous people and their communities (where not yet done) and provide support for the adoption by the General Assembly of a declaration on indigenous rights;

(b) Adopt or strengthen appropriate policies and/or legal instruments that will protect indigenous intellectual and cultural property and the right to preserve customary and administrative systems and practices.

26.5. United Nations organizations and other international development and finance organizations and Governments should, drawing on the active participation of indigenous people and their communities, as appropriate, take the following measures, inter alia, to incorporate their values, views and knowledge, including the unique contribution of indigenous women, in resource management and other policies and programmes that may affect them:

(a) Appoint a special focal point within each international organization, and organize annual interorganizational coordination meetings in consultation with Governments and indigenous organizations, as appropriate, and develop a procedure within and between operational agencies for assisting Governments in ensuring the coherent and coordinated incorporation of the views of indigenous people in the design and implementation of policies and programmes. Under this procedure, indigenous people and their communities should be informed and consulted and allowed to participate in national decision-making, in particular regarding regional and international cooperative efforts. In addition, these policies and programmes should take fully into account strategies based on local indigenous initiatives;

(b) Provide technical and financial assistance for capacity-building programmes to support the sustainable self-development of indigenous people and their communities;

(c) Strengthen research and education programmes aimed at:

(i) Achieving a better understanding of indigenous people's knowledge and management experience related to the environment, and applying this to contemporary development challenges;

(ii) Increasing the efficiency of indigenous people's resource management systems, for example, by promoting the adaptation and dissemination of suitable technological innovations;

(d) Contribute to the endeavours of indigenous people and their communities in resource management and conservation strategies (such as those that may be developed under appropriate projects funded through the Global Environment Facility and the Tropical Forestry Action Plan) and other programme areas of Agenda 21, including programmes to collect, analyse and use data and other information in support of sustainable development projects.

26.6. Governments, in full partnership with indigenous people and their communities should, where appropriate:

(a) Develop or strengthen national arrangements to consult with indigenous people and their communities with a view to reflecting their needs and incorporating their values and traditional and other knowledge and practices in national policies and programmes in the field of natural resource management and conservation and other development programmes affecting them;

(b) Cooperate at the regional level, where appropriate, to address common indigenous issues with a view to recognizing and strengthening their participation in sustainable development.

Means of implementation

(a) Financing and cost evaluation

26.7. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $3 million on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Legal and administrative frameworks

26.8. Governments should incorporate, in collaboration with the indigenous people affected, the rights and responsibilities of indigenous people and their communities in the legislation of each country, suitable to the country's specific situation. Developing countries may require technical assistance to implement these activities.

(c) Human resource development

26.9. International development agencies and Governments should commit financial and other resources to education and training for indigenous people and their communities to develop their capacities to achieve their sustainable self-development, and to contribute to and participate in sustainable and equitable development at the national level. Particular attention should be given to strengthening the role of indigenous women.

Chapter 27

STRENGTHENING THE ROLE OF NON-GOVERNMENTAL ORGANIZATIONS: PARTNERS FOR SUSTAINABLE DEVELOPMENT

PROGRAMME AREA

Basis for action

27.1. Non-governmental organizations play a vital role in the shaping and implementation of participatory democracy. Their credibility lies in the responsible and constructive role they play in society. Formal and informal organizations, as well as grass-roots movements, should be recognized as partners in the implementation of Agenda 21. The nature of the independent role played by non-governmental organizations within a society calls for real participation; therefore, independence is a major attribute of non-governmental organizations and is the precondition of real participation.

27.2. One of the major challenges facing the world community as it seeks to replace unsustainable development patterns with environmentally sound and sustainable development is the need to activate a sense of common purpose on behalf of all sectors of society. The chances of forging such a sense of purpose will depend on the willingness of all sectors to participate in genuine social partnership and dialogue, while recognizing the independent roles, responsibilities and special capacities of each.

27.3. Non-governmental organizations, including those non-profit organizations representing groups addressed in the present section of Agenda 21, possess well-established and diverse experience, expertise and capacity in fields which will be of particular importance to the implementation and review of environmentally sound and socially responsible sustainable development, as envisaged throughout Agenda 21. The community of non-governmental organizations, therefore, offers a global network that should be tapped, enabled and strengthened in support of efforts to achieve these common goals.

27.4. To ensure that the full potential contribution of non-governmental organizations is realized, the fullest possible communication and cooperation between international organizations, national and local governments and non-governmental organizations should be promoted in institutions mandated, and programmes designed to carry out Agenda 21. Non-governmental organizations will also need to foster cooperation and communication among themselves to reinforce their effectiveness as actors in the implementation of sustainable development.

Objectives

27.5. Society, Governments and international bodies should develop mechanisms to allow non-governmental organizations to play their partnership role responsibly and effectively in the process of environmentally sound and sustainable development.

27.6. With a view to strengthening the role of non-governmental organizations as social partners, the United Nations system and Governments should initiate a process, in consultation with non-governmental organizations, to review formal procedures and mechanisms for the involvement of these organizations at all levels from policy-making and decision-making to implementation.

27.7. By 1995, a mutually productive dialogue should be established at the national level between all Governments and non-governmental organizations and their self-organized networks to recognize and strengthen their respective roles in implementing environmentally sound and sustainable development.

27.8. Governments and international bodies should promote and allow the participation of non-governmental organizations in the conception, establishment and evaluation of official mechanisms and formal procedures designed to review the implementation of Agenda 21 at all levels.

Activities

27.9. The United Nations system, including international finance and development agencies, and all intergovernmental organizations and forums should, in consultation with non-governmental organizations, take measures to:

(a) Review and report on ways of enhancing existing procedures and mechanisms by which non-governmental organizations contribute to policy design, decision-making, implementation and evaluation at the individual agency level, in inter-agency discussions and in United Nations conferences;

(b) On the basis of subparagraph (a) above, enhance existing or, where they do not exist, establish, mechanisms and procedures within each agency to draw on the expertise and views of non-governmental organizations in policy and programme design, implementation and evaluation;

(c) Review levels of financial and administrative support for non-governmental organizations and the extent and effectiveness of their involvement in project and programme implementation, with a view to augmenting their role as social partners;

(d) Design open and effective means of achieving the participation of non-governmental organizations in the processes established to review and evaluate the implementation of Agenda 21 at all levels;

(e) Promote and allow non-governmental organizations and their self-organized networks to contribute to the review and evaluation of policies and programmes designed to implement Agenda 21, including support for developing country non-governmental organizations and their self-organized networks;

(f) Take into account the findings of non-governmental review systems and evaluation processes in relevant reports of the Secretary-General to the General Assembly, and of all pertinent United Nations organizations and other intergovernmental organizations and forums concerning implementation of Agenda 21, in accordance with the review process for Agenda 21;

(g) Provide access for non-governmental organizations to accurate and timely data and information to promote the effectiveness of their programmes and activities and their roles in support of sustainable development.

27.10. Governments should take measures to:

(a) Establish or enhance an existing dialogue with non-governmental organizations and their self-organized networks representing various sectors, which could serve to: (i) consider the rights and responsibilities of these organizations; (ii) efficiently channel integrated non-governmental inputs to the governmental policy development process; and (iii) facilitate non-governmental coordination in implementing national policies at the programme level;

(b) Encourage and enable partnership and dialogue between local non-governmental organizations and local authorities in activities aimed at sustainable development;

(c) Involve non-governmental organizations in national mechanisms or procedures established to carry out Agenda 21, making the best use of their particular capacities, especially in the fields of education, poverty alleviation and environmental protection and rehabilitation;

(d) Take into account the findings of non-governmental monitoring and review mechanisms in the design and evaluation of policies concerning the implementation of Agenda 21 at all levels;

(e) Review government education systems to identify ways to include and expand the involvement of non-governmental organizations in the field of formal and informal education and of public awareness;

(f) Make available and accessible to non-governmental organizations the data and information necessary for their effective contribution to research and to the design, implementation and evaluation of programmes.

Means of implementation

(a) Financing and cost evaluation

27.11. Depending on the outcome of review processes and the evolution of views as to how best to build partnership and dialogue between official organizations and groups of non-governmental organizations, relatively limited but unpredictable, costs will be involved at the international and national levels in enhancing consultative procedures and mechanisms. Non-governmental organizations will also require additional funding in support of their establishment of, improvement of or contributions to Agenda 21 monitoring systems. These costs will be significant but cannot be reliably estimated on the basis of existing information.

(b) Capacity-building

27.12. The organizations of the United Nations system and other intergovernmental organizations and forums, bilateral programmes and the private sector, as appropriate, will need to provide increased financial and administrative support for non-governmental organizations and their self-organized networks, in particular those based in developing countries, that contribute to the monitoring and evaluation of Agenda 21 programmes, and provide training for non-governmental organizations (and assist them to develop their own training programmes) at the international and regional levels to enhance their partnership role in programme design and implementation.

27.13. Governments will need to promulgate or strengthen, subject to country-specific conditions, any legislative measures necessary to enable the establishment by non-governmental organizations of consultative groups, and to ensure the right of non-governmental organizations to protect the public interest through legal action.

Chapter 28

LOCAL AUTHORITIES' INITIATIVES IN SUPPORT OF AGENDA 21

PROGRAMME AREA

Basis for action

28.1. Because so many of the problems and solutions being addressed by Agenda 21 have their roots in local activities, the participation and cooperation of local authorities will be a determining factor in fulfilling its objectives. Local authorities construct, operate and maintain economic, social and environmental infrastructure, oversee planning processes, establish local environmental policies and regulations, and assist in implementing national and subnational environmental policies. As the level of governance closest to the people, they play a vital role in educating, mobilizing and responding to the public to promote sustainable development.

Objectives

28.2. The following objectives are proposed for this programme area:

(a) By 1996, most local authorities in each country should have undertaken a consultative process with their populations and achieved a consensus on "a local Agenda 21" for the community;

(b) By 1993, the international community should have initiated a consultative process aimed at increasing cooperation between local authorities;

(c) By 1994, representatives of associations of cities and other local authorities should have increased levels of cooperation and coordination with the goal of enhancing the exchange of information and experience among local authorities;

(d) All local authorities in each country should be encouraged to implement and monitor programmes which aim at ensuring that women and youth are represented in decision-making, planning and implementation processes.

Activities

28.3. Each local authority should enter into a dialogue with its citizens, local organizations and private enterprises and adopt "a local Agenda 21". Through consultation and consensus-building, local authorities would learn from citizens and from local, civic, community, business and industrial organizations and acquire the information needed for formulating the best strategies. The process of consultation would increase household awareness of sustainable development issues. Local authority programmes, policies, laws and regulations to achieve Agenda 21 objectives would be assessed and modified, based on local programmes adopted. Strategies could also be used in supporting proposals for local, national, regional and international funding.

28.4. Partnerships should be fostered among relevant organs and organizations such as UNDP, the United Nations Centre for Human Settlements (Habitat) and UNEP, the World Bank, regional banks, the International Union of Local Authorities, the World Association of the Major Metropolises, Summit of Great Cities of the World, the United Towns Organization and other relevant partners, with a view to mobilizing increased international support for local authority programmes. An important goal would be to support, extend and improve existing institutions working in the field of local authority capacity-building and local environment management. For this purpose:

(a) Habitat and other relevant organs and organizations of the United Nations system are called upon to strengthen services in collecting information on strategies of local authorities, in particular for those that need international support;

(b) Periodic consultations involving both international partners and developing countries could review strategies and consider how such international support could best be mobilized. Such a sectoral consultation would complement concurrent country-focused consultations, such as those taking place in consultative groups and round tables.

28.5. Representatives of associations of local authorities are encouraged to establish processes to increase the exchange of information, experience and mutual technical assistance among local authorities.

Means of implementation

(a) Financing and cost evaluation

28.6. It is recommended that all parties reassess funding needs in this area. The Conference secretariat has estimated the average total annual cost (1993-2000) for strengthening international secretariat services for implementing the activities in this chapter to be about $1 million on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments.

(b) Human resource development and capacity-building

28.7. This programme should facilitate the capacity-building and training activities already contained in other chapters of Agenda 21.

Chapter 29

STRENGTHENING THE ROLE OF WORKERS AND THEIR TRADE UNIONS

PROGRAMME AREA

Basis for action

29.1. Efforts to implement sustainable development will involve adjustments and opportunities at the national and enterprise levels, with workers foremost among those concerned. As their representatives, trade unions are vital actors in facilitating the achievement of sustainable development in view of their experience in addressing industrial change, the extremely high priority they give to protection of the working environment and the related natural environment, and their promotion of socially responsible and economic development. The existing network of collaboration among trade unions and their extensive membership provide important channels through which the concepts and practices of sustainable development can be supported. The established principles of tripartism provide a basis for strengthened collaboration between workers and their representatives, Governments and employers in the implementation of sustainable development.

Objectives

29.2. The overall objective is poverty alleviation and full and sustainable employment, which contribute to safe, clean and healthy environments - the working environment, the community and the physical environment. Workers should be full participants in the implementation and evaluation of activities related to Agenda 21.

29.3. To that end the following objectives are proposed for accomplishment by the year 2000:

(a) To promote ratification of relevant conventions of ILO and the enactment of legislation in support of those conventions;

(b) To establish bipartite and tripartite mechanisms on safety, health and sustainable development;

(c) To increase the number of environmental collective agreements aimed at achieving sustainable development;

(d) To reduce occupational accidents, injuries and diseases according to recognized statistical reporting procedures;

(e) To increase the provision of workers' education, training and retraining, particularly in the area of occupational health and safety and environment.

Activities

(a) Promoting freedom of association

29.4. For workers and their trade unions to play a full and informed role in support of sustainable development, Governments and employers should promote the rights of individual workers to freedom of association and the protection of the right to organize as laid down in ILO conventions. Governments should consider ratifying and implementing those conventions, if they have not already done so.

(b) Strengthening participation and consultation

29.5. Governments, business and industry should promote the active participation of workers and their trade unions in decisions on the design, implementation and evaluation of national and international policies and programmes on environment and development, including employment policies, industrial strategies, labour adjustment programmes and technology transfers.

29.6. Trade unions, employers and Governments should cooperate to ensure that the concept of sustainable development is equitably implemented.

29.7. Joint (employer/worker) or tripartite (employer/worker/Government) collaborative mechanisms at the workplace, community and national levels should be established to deal with safety, health and environment, including special reference to the rights and status of women in the workplace.

29.8. Governments and employers should ensure that workers and their representatives are provided with all relevant information to enable effective participation in these decision-making processes.

29.9. Trade unions should continue to define, develop and promote policies on all aspects of sustainable development.

29.10. Trade unions and employers should establish the framework for a joint environmental policy, and set priorities to improve the working environment and the overall environmental performance of enterprise.

29.11. Trade unions should:

(a) Seek to ensure that workers are able to participate in environmental audits at the workplace and in environmental impact assessments;

(b) Participate in environment and development activities within the local community and promote joint action on potential problems of common concern;

(c) Play an active role in the sustainable development activities of international and regional organizations, particularly within the United Nations system.

(c) Provide adequate training

29.12. Workers and their representatives should have access to adequate training to augment environmental awareness, ensure their safety and health, and improve their economic and social welfare. Such training should ensure that the necessary skills are available to promote sustainable livelihoods and improve the working environment. Trade unions, employers, Governments and international agencies should cooperate in assessing training needs within their respective spheres of activity. Workers and their representatives should be involved in the design and implementation of worker training programmes conducted by employers and Governments.

Means of implementation

(a) Financing and cost evaluation

29.13. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $300 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Capacity-building

29.14. Particular attention should be given to strengthening the capacity of each of the tripartite social partners (Governments and employers' and workers' organizations) to facilitate greater collaboration towards sustainable development.

Chapter 30

STRENGTHENING THE ROLE OF BUSINESS AND INDUSTRY

INTRODUCTION

30.1. Business and industry, including transnational corporations, play a crucial role in the social and economic development of a country. A stable policy regime enables and encourages business and industry to operate responsibly and efficiently and to implement longer-term policies. Increasing prosperity, a major goal of the development process, is contributed primarily by the activities of business and industry. Business enterprises, large and small, formal and informal, provide major trading, employment and livelihood opportunities. Business opportunities available to women are contributing towards their professional development, strengthening their economic role and transforming social systems. Business and industry, including transnational corporations, and their representative organizations should be full participants in the implementation and evaluation of activities related to Agenda 21.

30.2. Through more efficient production processes, preventive strategies, cleaner production technologies and procedures throughout the product life cycle, hence minimizing or avoiding wastes, the policies and operations of business and industry, including transnational corporations, can play a major role in reducing impacts on resource use and the environment. Technological innovations, development, applications, transfer and the more comprehensive aspects of partnership and cooperation are to a very large extent within the province of business and industry.

30.3. Business and industry, including transnational corporations, should recognize environmental management as among the highest corporate priorities and as a key determinant to sustainable development. Some enlightened leaders of enterprises are already implementing "responsible care" and product stewardship policies and programmes, fostering openness and dialogue with employees and the public and carrying out environmental audits and assessments of compliance. These leaders in business and industry, including transnational corporations, are increasingly taking voluntary initiatives, promoting and implementing self-regulations and greater responsibilities in ensuring their activities have minimal impacts on human health and the environment. The regulatory regimes introduced in many countries and the growing consciousness of consumers and the general public and enlightened leaders of business and industry, including transnational corporations, have all contributed to this. A positive contribution of business and industry, including transnational corporations, to sustainable development can increasingly be achieved by using economic instruments such as free market mechanisms in which the prices of goods and services should increasingly reflect the environmental costs of their input, production, use, recycling and disposal subject to country-specific conditions.

30.4. The improvement of production systems through technologies and processes that utilize resources more efficiently and at the same time produce less wastes - achieving more with less - is an important pathway towards sustainability for business and industry. Similarly, facilitating and encouraging inventiveness, competitiveness and voluntary initiatives are necessary for stimulating more varied, efficient and effective options. To address these major requirements and strengthen further the role of business and industry, including transnational corporations, the following two programmes are proposed.

PROGRAMME AREAS

A. Promoting cleaner production

Basis for action

30.5. There is increasing recognition that production, technology and management that use resources inefficiently form residues that are not reused, discharge wastes that have adverse impacts on human health and the environment and manufacture products that when used have further impacts and are difficult to recycle, need to be replaced with technologies, good engineering and management practices and know-how that would minimize waste throughout the product life cycle. The concept of cleaner production implies striving for optimal efficiencies at every stage of the product life cycle. A result would be the improvement of the overall competitiveness of the enterprise. The need for a transition towards cleaner production policies was recognized at the UNIDO-organized ministerial-level Conference on Ecologically Sustainable Industrial Development, held at Copenhagen in October 1991. 1/

Objectives

30.6. Governments, business and industry, including transnational corporations, should aim to increase the efficiency of resource utilization, including increasing the reuse and recycling of residues, and to reduce the quantity of waste discharge per unit of economic output.

Activities

30.7. Governments, business and industry, including transnational corporations, should strengthen partnerships to implement the principles and criteria for sustainable development.

30.8. Governments should identify and implement an appropriate mix of economic instruments and normative measures such as laws, legislations and standards, in consultation with business and industry, including transnational corporations, that will promote the use of cleaner production, with special consideration for small and medium-sized enterprises. Voluntary private initiatives should also be encouraged.

30.9. Governments, business and industry, including transnational corporations, academia and international organizations, should work towards the development and implementation of concepts and methodologies for the internalization of environmental costs into accounting and pricing mechanisms.

30.10. Business and industry, including transnational corporations, should be encouraged:

(a) To report annually on their environmental records, as well as on their use of energy and natural resources;

(b) To adopt and report on the implementation of codes of conduct promoting the best environmental practice, such as the Business Charter on Sustainable Development of the International Chamber of Commerce (ICC) and the chemical industry's responsible care initiative.

30.11. Governments should promote technological and know-how cooperation between enterprises, encompassing identification, assessment, research and development, management marketing and application of cleaner production.

30.12. Industry should incorporate cleaner production policies in its operations and investments, taking also into account its influence on suppliers and consumers.

30.13. Industry and business associations should cooperate with workers and trade unions to continuously improve the knowledge and skills for implementing sustainable development operations.

30.14. Industry and business associations should encourage individual companies to undertake programmes for improved environmental awareness and responsibility at all levels to make these enterprises dedicated to the task of improving environmental performance based on internationally accepted management practices.

30.15. International organizations should increase education, training and awareness activities relating to cleaner production, in collaboration with industry, academia and relevant national and local authorities.

30.16. International and non-governmental organizations, including trade and scientific associations, should strengthen cleaner production information dissemination by expanding existing databases, such as the UNEP International Cleaner Production Clearing House (ICPIC), the UNIDO Industrial and Technological Information Bank (INTIB) and the ICC International Environment Bureau (IEB), and should forge networking of national and international information systems.

B. Promoting responsible entrepreneurship

Basis for action

30.17. Entrepreneurship is one of the most important driving forces for innovations, increasing market efficiencies and responding to challenges and opportunities. Small and medium-sized entrepreneurs, in particular, play a very important role in the social and economic development of a country. Often, they are the major means for rural development, increasing off-farm employment and providing the transitional means for improving the livelihoods of women. Responsible entrepreneurship can play a major role in improving the efficiency of resource use, reducing risks and hazards, minimizing wastes and safeguarding environmental qualities.

Objectives

30.18. The following objectives are proposed:

(a) To encourage the concept of stewardship in the management and utilization of natural resources by entrepreneurs;

(b) To increase the number of entrepreneurs engaged in enterprises that subscribe to and implement sustainable development policies.

Activities

30.19. Governments should encourage the establishment and operations of sustainably managed enterprises. The mix would include regulatory measures, economic incentives and streamlining of administrative procedures to assure maximum efficiency in dealing with applications for approval in order to facilitate investment decisions, advice and assistance with information, infrastructural support and stewardship responsibilities.

30.20. Governments should encourage, in cooperation with the private sector, the establishment of venture capital funds for sustainable development projects and programmes.

30.21. In collaboration with business, industry, academia and international organizations, Governments should support training in the environmental aspects of enterprise management. Attention should also be directed towards apprenticeship schemes for youth.

30.22. Business and industry, including transnational corporations, should be encouraged to establish world-wide corporate policies on sustainable development, arrange for environmentally sound technologies to be available to affiliates owned substantially by their parent company in developing countries without extra external charges, encourage overseas affiliates to modify procedures in order to reflect local ecological conditions and share experiences with local authorities, national Governments and international organizations.

30.23. Large business and industry, including transnational corporations, should consider establishing partnership schemes with small and medium-sized enterprises to help facilitate the exchange of experience in managerial skills, market development and technological know-how, where appropriate, with the assistance of international organizations.

30.24. Business and industry should establish national councils for sustainable development and help promote entrepreneurship in the formal and informal sectors. The inclusion of women entrepreneurs should be facilitated.

30.25. Business and industry, including transnational corporations, should increase research and development of environmentally sound technologies and environmental management systems, in collaboration with academia and the scientific/engineering establishments, drawing upon indigenous knowledge, where appropriate.

30.26. Business and industry, including transnational corporations, should ensure responsible and ethical management of products and processes from the point of view of health, safety and environmental aspects. Towards this end, business and industry should increase self-regulation, guided by appropriate codes, charters and initiatives integrated into all elements of business planning and decision-making, and fostering openness and dialogue with employees and the public.

30.27. Multilateral and bilateral financial aid institutions should continue to encourage and support small- and medium-scale entrepreneurs engaged in sustainable development activities.

30.28. United Nations organizations and agencies should improve mechanisms for business and industry inputs, policy and strategy formulation processes, to ensure that environmental aspects are strengthened in foreign investment.

30.29. International organizations should increase support for research and development on improving the technological and managerial requirements for sustainable development, in particular for small and medium-sized enterprises in developing countries.

Means of implementation

Financing and cost evaluation

30.30. The activities included under this programme area are mostly changes in the orientation of existing activities and additional costs are not expected to be significant. The cost of activities by Governments and international organizations are already included in other programme areas.

Notes

1/ See A/CONF.151/PC/125.

Chapter 31

SCIENTIFIC AND TECHNOLOGICAL COMMUNITY

INTRODUCTION

31.1. The present chapter focuses on how to enable the scientific and technological community, which includes, among others, engineers, architects, industrial designers, urban planners and other professionals and policy makers, to make a more open and effective contribution to the decision-making processes concerning environment and development. It is important that the role of science and technology in human affairs be more widely known and better understood, both by decision makers who help determine public policy and by the general public. The cooperative relationship existing between the scientific and technological community and the general public should be extended and deepened into a full partnership. Improved communication and cooperation between the scientific and technological community and decision makers will facilitate greater use of scientific and technical information and knowledge in policies and programme implementation. Decision makers should create more favourable conditions for improving training and independent research in sustainable development. Existing multidisciplinary approaches will have to be strengthened and more interdisciplinary studies developed between the scientific and technological community and policy makers and with the general public to provide leadership and practical know-how to the concept of sustainable development. The public should be assisted in communicating their sentiments to the scientific and technological community concerning how science and technology might be better managed to affect their lives in a beneficial way. By the same token, the independence of the scientific and technological community to investigate and publish without restriction and to exchange their findings freely must be assured. The adoption and implementation of ethical principles and codes of practice for the scientific and technological community that are internationally accepted could enhance professionalism and may improve and hasten recognition of the value of its contributions to environment and development, recognizing the continuing evolution and uncertainty of scientific knowledge.

PROGRAMME AREAS

A. Improving communication and cooperation among the scientific and technological community, decision makers and the public

Basis for action

31.2. The scientific and technological community and policy makers should increase their interaction in order to implement strategies for sustainable development on the basis of the best available knowledge. This implies that decision makers should provide the necessary framework for rigorous research and for full and open communication of the findings of the scientific and technological community, and develop with it ways in which research results and the concerns stemming from the findings can be communicated to decision-making bodies so as to better link scientific and technical knowledge with strategic policy and programme formulation. At the same time, this dialogue would assist the scientific and technological community in developing priorities for research and proposing actions for constructive solutions.

Objectives

31.3. The following objectives are proposed:

(a) To extend and open up the decision-making process and broaden the range of developmental and environmental issues where cooperation at all levels between the scientific and technological community and decision makers can take place;

(b) To improve the exchange of knowledge and concerns between the scientific and technological community and the general public in order to enable policies and programmes to be better formulated, understood and supported.

Activities

31.4. Governments should undertake the following activities:

(a) Review how national scientific and technological activities could be more responsive to sustainable development needs as part of an overall effort to strengthen national research and development systems, including through strengthening and widening the membership of national scientific and technological advisory councils, organizations and committees to ensure that:

(i) The full range of national needs for scientific and technological programmes are communicated to Governments and the public;

(ii) The various strands of public opinion are represented;

(b) Promote regional cooperative mechanisms to address regional needs for sustainable development. Such regional cooperative mechanisms could be facilitated through public/private partnerships and provide support to Governments, industry, non-governmental educational institutions and other domestic and international organizations, and by strengthening global professional networks;

(c) Improve and expand scientific and technical inputs through appropriate mechanisms to intergovernmental consultative, cooperative and negotiating processes towards international and regional agreements;

(d) Strengthen science and technology advice to the highest levels of the United Nations, and other international institutions, in order to ensure the inclusion of science and technology know-how in sustainable development policies and strategies;

(e) Improve and strengthen programmes for disseminating research results of universities and research institutions. This requires recognition of and greater support to the scientists, technologists and teachers who are engaged in communicating and interpreting scientific and technological information to policy makers, professionals in other fields and the general public. Such support should focus on the transfer of skills and the transfer and adaptation of planning techniques. This requires full and open sharing of data and information among scientists and decision makers. The publication of national scientific research reports and technical reports that are understandable and relevant to local sustainable development needs would also improve the interface between science and decision-making, as well as the implementation of scientific results;

(f) Improve links between the official and independent research sectors and industry so that research may become an important element of industrial strategy;

(g) Promote and strengthen the role of women as full partners in the science and technology disciplines;

(h) Develop and implement information technologies to enhance the dissemination of information for sustainable development.

Means of implementation

(a) Financing and cost evaluation

31.5. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $15 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Capacity-building

31.6. Intergovernmental panels on development and environmental issues should be organized, with emphasis on their scientific and technical aspects, and studies of responsiveness and adaptability included in subsequent programmes of action.

B. Promoting codes of practice and guidelines related to science and technology

Basis for action

31.7. Scientists and technologists have a special set of responsibilities which belong to them both as inheritors of a tradition and as professionals and members of disciplines devoted to the search for knowledge and to the need to protect the biosphere in the context of sustainable development.

31.8. Increased ethical awareness in environmental and developmental decision-making should help to place appropriate priorities for the maintenance and enhancement of life-support systems for their own sake, and in so doing ensure that the functioning of viable natural processes is properly valued by present and future societies. Therefore, a strengthening of the codes of practice and guidelines for the scientific and technological community would increase environmental awareness and contribute to sustainable development. It would build up the level of esteem and regard for the scientific and technological community and facilitate the "accountability" of science and technology.

Objectives

31.9. The objective should be to develop, improve and promote international acceptance of codes of practice and guidelines relating to science and technology in which the integrity of life-support systems is comprehensively accounted for and where the important role of science and technology in reconciling the needs of environment and development is accepted. To be effective in the decision-making process, such principles, codes of practice and guidelines must not only be agreed upon by the scientific and technological community, but also recognized by the society as a whole.

Activities

31.10. The following activities could be undertaken:

(a) Strengthening national and international cooperation, including the non-governmental sector, to develop codes of practice and guidelines regarding environmentally sound and sustainable development, taking into account the Rio Declaration and existing codes of practice and guidelines;

(b) Strengthening and establishing national advisory groups on environmental and developmental ethics, in order to develop a common value framework between the scientific and technological community and society as a whole, and promote continuous dialogue;

(c) Extending education and training in developmental and environmental ethical issues to integrate such objectives into education curricula and research priorities;

(d) Reviewing and amending relevant national and international environment and development legal instruments to ensure appropriate codes of practice and guidelines are incorporated into such regulatory machinery.

Means of implementation

(a) Financing and cost evaluation

31.11. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $5 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Capacity-building

31.12. Codes of practice and guidelines, including on appropriate principles, should be developed for and by the scientific and technological community in the pursuit of its research activities and implementation of programmes aimed at sustainable development.

Chapter 32

STRENGTHENING THE ROLE OF FARMERS*

PROGRAMME AREA

Basis for action

32.1. Agriculture occupies one third of the land surface of the Earth, and is the central activity for much of the world's population. Rural activities take place in close contact with nature, adding value to it by producing renewable resources, while at the same time becoming vulnerable to overexploitation and improper management.

32.2. The rural household, indigenous people and their communities, and the family farmer, a substantial number of whom are women, have been the stewards of much of the Earth's resources. Farmers must conserve their physical environment as they depend on it for their sustenance. Over the past 20 years there has been impressive increase in aggregate agricultural production. Yet, in some regions, this increase has been outstripped by population growth or international debt or falling commodity prices. Further, the natural resources that sustain farming activity need proper care, and there is a growing concern about the sustainability of agricultural production systems.

32.3. A farmer-centred approach is the key to the attainment of sustainability in both developed and developing countries and many of the programme areas in Agenda 21 address this objective. A significant number of the rural population in developing countries depend primarily upon small-scale, subsistence-oriented agriculture based on family labour. However, they have limited access to resources, technology, alternative livelihood and means of production. As a result, they are engaged in the overexploitation of natural resources, including marginal lands.

32.4. The sustainable development of people in marginal and fragile ecosystems is also addressed in Agenda 21. The key to the successful implementation of these programmes lies in the motivation and attitudes of individual farmers and government policies that would provide incentives to farmers to manage their natural resources efficiently and in a sustainable way. Farmers, particularly women, face a high degree of economic, legal and institutional uncertainties when investing in their land and other resources. The decentralization of decision-making towards local and community organizations is the key in changing people's behaviour and implementing sustainable farming strategies. This programme area deals with activities which can contribute to this end.

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* In this chapter, all references to "farmers" include all rural people who derive their livelihood from activities such as farming, fishing and forest harvesting. The term "farming" also includes fishing and forest harvesting.

Objectives

32.5. The following objectives are proposed:

(a) To encourage a decentralized decision-making process through the creation and strengthening of local and village organizations that would delegate power and responsibility to primary users of natural resources;

(b) To support and enhance the legal capacity of women and vulnerable groups with regard to access, use and tenure of land;

(c) To promote and encourage sustainable farming practices and technologies;

(d) To introduce or strengthen policies that would encourage self-sufficiency in low-input and low-energy technologies, including indigenous practices, and pricing mechanisms that internalize environmental costs;

(e) To develop a policy framework that provides incentives and motivation among farmers for sustainable and efficient farming practices;

(f) To enhance the participation of farmers, men and women, in the design and implementation of policies directed towards these ends, through their representative organizations.

Activities

(a) Management-related activities

32.6. National Governments should:

(a) Ensure the implementation of the programmes on sustainable livelihoods, agriculture and rural development, managing fragile ecosystems, water use in agriculture, and integrated management of natural resources;

(b) Promote pricing mechanisms, trade policies, fiscal incentives and other policy instruments that positively affect individual farmer's decisions about an efficient and sustainable use of natural resources, and take full account of the impact of these decisions on household food security, farm incomes, employment and the environment;

(c) Involve farmers and their representative organizations in the formulation of policy;

(d) Protect, recognize and formalize women's access to tenure and use of land, as well as rights to land, access to credit, technology, inputs and training;

(e) Support the formation of farmers' organizations by providing adequate legal and social conditions.

32.7. Support for farmers' organizations could be arranged as follows:

(a) National and international research centres should cooperate with farmers' organizations in developing location-specific environment-friendly farming techniques;

(b) National Governments, multilateral and bilateral development agencies and non-governmental organizations should collaborate with farmers' organizations in formulating agricultural development projects to specific agro-ecological zones.

(b) Data and information

32.8. Governments and farmers' organizations should:

(a) Initiate mechanisms to document, synthesize and disseminate local knowledge, practices and project experiences so that they will make use of the lessons of the past when formulating and implementing policies affecting farming, forest and fishing populations;

(b) Establish networks for the exchange of experiences with regard to farming that help to conserve land, water and forest resources, minimize the use of chemicals and reduce or reutilize farm wastes;

(c) Develop pilot projects and extension services that would seek to build on the needs and knowledge base of women farmers.

(c) International and regional cooperation

32.9. FAO, IFAD, WFP, the World Bank, the regional development banks and other international organizations involved in rural development should involve farmers and their representatives in their deliberations, as appropriate.

32.10. Representative organizations of farmers should establish programmes for the development and support of farmers' organizations, particularly in developing countries.

Means of implementation

(a) Financing and cost evaluation

32.11. The financing needed for this programme area is estimated in chapter 14 (Promoting sustainable agriculture and rural development), particularly in the programme area entitled "Ensuring people's participation and promoting human resource development for sustainable agriculture". The costs shown under chapters 3 (Combating poverty), 12 (Managing fragile ecosystems: combating desertification and drought), and 13 (Managing fragile ecosystems: sustainable mountain development) are also relevant to this programme area.

(b) Scientific and technological means

32.12. Governments and appropriate international organizations, in collaboration with national research organizations and non-governmental organizations should, as appropriate:

(a) Develop environmentally sound farming technologies that enhance crop yields, maintain land quality, recycle nutrients, conserve water and energy and control pests and weeds;

(b) Conduct studies of high-resource and low-resource agriculture to compare their productivity and sustainability. The research should preferably be conducted under various environmental and sociological settings;

(c) Support research on mechanization that would optimize human labour and animal power and hand-held and animal-drawn equipment that can be easily operated and maintained. The development of farm technologies should take into account farmers' available resources and the role of animals in farming households and the ecology.

(c) Human resource development

32.13. Governments, with the support of multilateral and bilateral development agencies and scientific organizations, should develop curricula for agricultural colleges and training institutions that would integrate ecology into agricultural science. Interdisciplinary programmes in agricultural ecology are essential to the training of a new generation of agricultural scientists and field-level extension agents.

(d) Capacity-building

32.14. Governments should, in the light of each country's specific situation:

(a) Create the institutional and legal mechanisms to ensure effective land tenure to farmers. The absence of legislation indicating land rights has been an obstacle in taking action against land degradation in many farming communities in developing countries;

(b) Strengthen rural institutions that would enhance sustainability through locally managed credit systems and technical assistance, local production and distribution facilities for inputs, appropriate equipment and small-scale processing units, and marketing and distribution systems;

(c) Establish mechanisms to increase access of farmers, in particular women and farmers from indigenous groups, to agricultural training, credit and use of improved technology for ensuring food security.

SECTION IV. MEANS OF IMPLEMENTATION

Chapter 33

FINANCIAL RESOURCES AND MECHANISMS

INTRODUCTION

33.1. The General Assembly, in resolution 44/228 of 22 December 1989, *inter alia*, decided that the United Nations Conference on Environment and Development should:

> Identify ways and means of providing new and additional financial resources, particularly to developing countries, for environmentally sound development programmes and projects in accordance with national development objectives, priorities and plans and to consider ways of effectively monitoring the provision of such new and additional financial resources, particularly to developing countries, so as to enable the international community to take further appropriate action on the basis of accurate and reliable data;
>
> Identify ways and means of providing additional financial resources for measures directed towards solving major environmental problems of global concern and especially of supporting those countries, in particular developing countries, for which the implementation of such measures would entail a special or abnormal burden, owing, in particular, to their lack of financial resources, expertise or technical capacity;
>
> Consider various funding mechanisms, including voluntary ones, and examine the possibility of a special international fund and other innovative approaches, with a view to ensuring, on a favourable basis, the most effective and expeditious transfer of environmentally sound technologies to developing countries;
>
> Quantify the financial requirements for the successful implementation of Conference decisions and recommendations and identify possible sources, including innovative ones, of additional resources.

33.2. This chapter deals with the financing of the implementation of Agenda 21, which reflects a global consensus integrating environmental considerations into an accelerated development process. For each of the other chapters, the secretariat of the Conference has provided indicative estimates of the total costs of implementation for developing countries and the requirements for grant or other concessional financing needed from the international community. These reflect the need for a substantially increased effort, both by countries themselves and by the international community.

BASIS FOR ACTION

33.3. Economic growth, social development and poverty eradication are the first and overriding priorities in developing countries and are themselves essential to meeting national and global sustainability objectives. In the light of the global benefits to be realized by the implementation of Agenda 21 as a whole, the provision to developing countries of effective means, inter alia, financial resources and technology, without which it will be difficult for them to fully implement their commitments, will serve the common interests of developed and developing countries and of humankind in general, including future generations.

33.4. The cost of inaction could outweigh the financial costs of implementing Agenda 21. Inaction will narrow the choices of future generations.

33.5. For dealing with environmental issues, special efforts will be required. Global and local environmental issues are interrelated. The United Nations Framework Convention on Climate Change and the Convention on Biological Diversity address two of the most important global issues.

33.6. Economic conditions, both domestic and international, that encourage free trade and access to markets will help make economic growth and environmental protection mutually supportive for all countries, particularly for developing countries and countries undergoing the process of transition to a market economy (see chapter 2 for a fuller discussion of these issues).

33.7. International cooperation for sustainable development should also be strengthened in order to support and complement the efforts of developing countries, particularly the least developed countries.

33.8. All countries should assess how to translate Agenda 21 into national policies and programmes through a process that will integrate environment and development considerations. National and local priorities should be established by means that include public participation and community involvement, promoting equal opportunity for men and women.

33.9. For an evolving partnership among all countries of the world, including, in particular, between developed and developing countries, sustainable development strategies and enhanced and predictable levels of funding in support of longer term objectives are required. For that purpose, developing countries should articulate their own priority actions and needs for support and developed countries should commit themselves to addressing these priorities. In this respect, consultative groups and round tables and other nationally based mechanisms can play a facilitative role.

33.10. The implementation of the huge sustainable development programmes of Agenda 21 will require the provision to developing countries of substantial new and additional financial resources. Grant or concessional financing should be provided according to sound and equitable criteria and indicators. The progressive implementation of Agenda 21 should be matched by the provision of such necessary financial resources. The initial phase will be accelerated by substantial early commitments of concessional funding.

OBJECTIVES

33.11. The objectives are as follows:

(a) To establish measures concerning financial resources and mechanisms for the implementation of Agenda 21;

(b) To provide new and additional financial resources that are both adequate and predictable;

(c) To seek full use and continuing qualitative improvement of funding mechanisms to be utilized for the implementation of Agenda 21.

ACTIVITIES

33.12. Fundamentally, the activities of this chapter are related to the implementation of all the other chapters of Agenda 21.

MEANS OF IMPLEMENTATION

33.13. In general, the financing for the implementation of Agenda 21 will come from a country's own public and private sectors. For developing countries, particularly the least developed countries, ODA is a main source of external funding, and substantial new and additional funding for sustainable development and implementation of Agenda 21 will be required. Developed countries reaffirm their commitments to reach the accepted United Nations target of 0.7 per cent of GNP for ODA and, to the extent that they have not yet achieved that target, agree to augment their aid programmes in order to reach that target as soon as possible and to ensure prompt and effective implementation of Agenda 21. Some countries have agreed to reach the target by the year 2000. It was decided that the Commission on Sustainable Development would regularly review and monitor progress towards this target. This review process should systematically combine the monitoring of the implementation of Agenda 21 with a review of the financial resources available. Those countries that have already reached the target are to be commended and encouraged to continue to contribute to the common effort to make available the substantial additional resources that have to be mobilized. Other developed countries, in line with their support for reform efforts in developing countries, agree to make their best efforts to increase their level of ODA. In this context, the importance of equitable burden-sharing among developed countries is recognized. Other countries, including those undergoing the process of transition to a market economy, may voluntarily augment the contributions of the developed countries.

33.14. Funding for Agenda 21 and other outcomes of the Conference should be provided in a way that maximizes the availability of new and additional resources and uses all available funding sources and mechanisms. These include, among others:

(a) The multilateral development banks and funds:

(i) The International Development Association (IDA). Among the various issues and options that IDA deputies will examine in connection with the forthcoming tenth replenishment of IDA, the statement made by the President of the World Bank at the United Nations Conference on Environment and Development should be given special consideration in order to help the poorest countries meet their sustainable development objectives as contained in Agenda 21;

(ii) Regional and subregional development banks. The regional and subregional development banks and funds should play an increased and more effective role in providing resources on concessional or other favourable terms needed to implement Agenda 21;

(iii) The Global Environment Facility, managed jointly by the World Bank, UNDP and UNEP, whose additional grant and concessional funding is designed to achieve global environmental benefits, should cover the agreed incremental costs of relevant activities under Agenda 21, in particular for developing countries. Therefore, it should be restructured so as to, inter alia:

Encourage universal participation;

Have sufficient flexibility to expand its scope and coverage to relevant programme areas of Agenda 21, with global environmental benefits, as agreed;

Ensure a governance that is transparent and democratic in nature, including in terms of decision-making and operations, by guaranteeing a balanced and equitable representation of the interests of developing countries and giving due weight to the funding efforts of donor countries;

Ensure new and additional financial resources on grant and concessional terms, in particular to developing countries;

Ensure predictability in the flow of funds by contributions from developed countries, taking into account the importance of equitable burden-sharing;

Ensure access to and disbursement of the funds under mutually agreed criteria without introducing new forms of conditionality;

(b) The relevant specialized agencies, other United Nations bodies and other international organizations, which have designated roles to play in supporting national Governments in implementing Agenda 21;

(c) Multilateral institutions for capacity-building and technical cooperation. Necessary financial resources should be provided to UNDP to use its network of field offices and its broad mandate and experience in the field of technical cooperation for facilitating capacity-building at the country level, making full use of the expertise of the specialized agencies and other United Nations bodies within their respective areas of competence, in particular UNEP and including the multilateral and regional development banks;

(d) Bilateral assistance programmes. These programmes will need to be strengthened in order to promote sustainable development;

(e) Debt relief. It is important to achieve durable solutions to the debt problems of low- and middle-income developing countries in order to provide them with the needed means for sustainable development. Measures to address the continuing debt problems of low- and middle-income countries should be kept under review. All creditors in the Paris Club should promptly implement the agreement of December 1991 to provide debt relief for the poorest heavily indebted countries pursuing structural adjustment; debt relief measures should be kept under review so as to address the continuing difficulties of those countries;

(f) Private funding. Voluntary contributions through non-governmental channels, which have been running at about 10 per cent of ODA, might be increased.

33.15. Investment. Mobilization of higher levels of foreign direct investment and technology transfers should be encouraged through national policies that promote investment and through joint ventures and other modalities.

33.16. Innovative financing. New ways of generating new public and private financial resources should be explored, in particular:

(a) Various forms of debt relief, apart from official or Paris Club debt, including greater use of debt swaps;

(b) The use of economic and fiscal incentives and mechanisms;

(c) The feasibility of tradeable permits;

(d) New schemes for fund-raising and voluntary contributions through private channels, including non-governmental organizations;

(e) The reallocation of resources at present committed to military purposes.

33.17. A supportive international and domestic economic climate conducive to sustained economic growth and development is important, particularly for developing countries, in order to achieve sustainability.

33.18. The secretariat of the Conference has estimated the average annual costs (1993-2000) of implementing in developing countries the activities in Agenda 21 to be over $600 billion, including about $125 billion on grant or concessional terms from the international community. These are indicative and order-of-magnitude estimates only, and have not been reviewed by Governments. Actual costs will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

33.19. Developed countries and others in a position to do so should make initial financial commitments to give effect to the decisions of the Conference. They should report on such plans and commitments to the United Nations General Assembly at its forty-seventh session, in 1992.

33.20. Developing countries should also begin to draw up national plans for sustainable development to give effect to the decisions of the Conference.

33.21. Review and monitoring of the financing of Agenda 21 is essential. Questions related to the effective follow-up of the Conference are discussed in chapter 38 (International institutional arrangements). It will be important to review on a regular basis the adequacy of funding and mechanisms, including efforts to reach agreed objectives of the present chapter, including targets where applicable.

Chapter 34

TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGY, COOPERATION AND CAPACITY-BUILDING

INTRODUCTION

34.1. Environmentally sound technologies protect the environment, are less polluting, use all resources in a more sustainable manner, recycle more of their wastes and products, and handle residual wastes in a more acceptable manner than the technologies for which they were substitutes.

34.2. Environmentally sound technologies in the context of pollution are "process and product technologies" that generate low or no waste, for the prevention of pollution. They also cover "end of the pipe" technologies for treatment of pollution after it has been generated.

34.3. Environmentally sound technologies are not just individual technologies, but total systems which include know-how, procedures, goods and services, and equipment as well as organizational and managerial procedures. This implies that when discussing transfer of technologies, the human resource development and local capacity-building aspects of technology choices, including gender-relevant aspects, should also be addressed. Environmentally sound technologies should be compatible with nationally determined socio-economic, cultural and environmental priorities.

34.4. There is a need for favourable access to and transfer of environmentally sound technologies, in particular to developing countries, through supportive measures that promote technology cooperation and that should enable transfer of necessary technological know-how as well as building up of economic, technical, and managerial capabilities for the efficient use and further development of transferred technology. Technology cooperation involves joint efforts by enterprises and Governments, both suppliers of technology and its recipients. Therefore, such cooperation entails an iterative process involving government, the private sector, and research and development facilities to ensure the best possible results from transfer of technology. Successful long-term partnerships in technology cooperation necessarily require continuing systematic training and capacity-building at all levels over an extended period of time.

34.5. The activities proposed in this chapter aim at improving conditions and processes on information, access to and transfer of technology (including the state-of-the-art technology and related know-how), in particular to developing countries, as well as on capacity-building and cooperative arrangements and partnerships in the field of technology, in order to promote sustainable development. New and efficient technologies will be essential to increase the capabilities, in particular of developing countries, to achieve sustainable development, sustain the world's economy, protect the environment, and alleviate poverty and human suffering. Inherent in these activities is the need to address the improvement of technology currently used and its replacement, when appropriate, with more accessible and more environmentally sound technology.

BASIS FOR ACTION

34.6. This chapter of Agenda 21 is without prejudice to specific commitments and arrangements on transfer of technology to be adopted in specific international instruments.

34.7. The availability of scientific and technological information and access to and transfer of environmentally sound technology are essential requirements for sustainable development. Providing adequate information on the environmental aspects of present technologies consists of two interrelated components: upgrading information on present and state-of-the-art technologies, including their environmental risks, and improving access to environmentally sound technologies.

34.8. The primary goal of improved access to technology information is to enable informed choices, leading to access to and transfer of such technologies and the strengthening of countries' own technological capabilities.

34.9. A large body of useful technological knowledge lies in the public domain. There is a need for the access of developing countries to such technologies as are not covered by patents or lie in the public domain. Developing countries would also need to have access to the know-how and expertise required for the effective utilization of the aforesaid technologies.

34.10. Consideration must be given to the role of patent protection and intellectual property rights along with an examination of their impact on the access to and transfer of environmentally sound technology, in particular to developing countries, as well as to further exploring efficiently the concept of assured access for developing countries to environmentally sound technology in its relation to proprietary rights with a view to developing effective responses to the needs of developing countries in this area.

34.11. Proprietary technology is available through commercial channels, and international business is an important vehicle for technology transfer. Tapping this pool of knowledge and recombining it with local innovations to generate alternative technologies should be pursued. At the same time that concepts and modalities for assured access to environmentally sound technologies, including state-of-the-art technologies, in particular by developing countries, continued to be explored, enhanced access to environmentally sound technologies should be promoted, facilitated and financed as appropriate, while providing fair incentives to innovators that promote research and development of new environmentally sound technologies.

34.12. Recipient countries require technology and strengthened support to help further develop their scientific, technological, professional and related capacities, taking into account existing technologies and capacities. This support would enable countries, in particular developing countries, to make more rational technology choices. These countries could then better assess environmentally sound technologies prior to their transfer and properly apply and manage them, as well as improve upon already existing technologies and adapt them to suit their specific development needs and priorities.

34.13. A critical mass of research and development capacity is crucial to the effective dissemination and use of environmentally sound technologies and their generation locally. Education and training programmes should reflect the needs of specific goal-oriented research activities and should work to produce specialists literate in environmentally sound technology and with an interdisciplinary outlook. Achieving this critical mass involves building the capabilities of craftspersons, technicians and middle-level managers, scientists, engineers and educators, as well as developing their corresponding social or managerial support systems. Transferring environmentally sound technologies also involves innovatively adapting and incorporating them into the local or national culture.

OBJECTIVES

34.14. The following objectives are proposed:

(a) To help to ensure the access, in particular of developing countries, to scientific and technological information, including information on state-of-the-art technologies;

(b) To promote, facilitate, and finance, as appropriate, the access to and the transfer of environmentally sound technologies and corresponding know-how, in particular to developing countries, on favourable terms, including on concessional and preferential terms, as mutually agreed, taking into account the need to protect intellectual property rights as well as the special needs of developing countries for the implementation of Agenda 21;

(c) To facilitate the maintenance and promotion of environmentally sound indigenous technologies that may have been neglected or displaced, in particular in developing countries, paying particular attention to their priority needs and taking into account the complementary roles of men and women;

(d) To support endogenous capacity-building, in particular in developing countries, so they can assess, adopt, manage and apply environmentally sound technologies. This could be achieved through inter alia:

(i) Human resource development;

(ii) Strengthening of institutional capacities for research and development and programme implementation;

(iii) Integrated sector assessments of technology needs, in accordance with countries' plans, objectives and priorities as foreseen in the implementation of Agenda 21 at the national level;

(e) To promote long-term technological partnerships between holders of environmentally sound technologies and potential users.

ACTIVITIES

(a) Development of international information networks which link national, subregional, regional and international systems

34.15. Existing national, subregional, regional and international information systems should be developed and linked through regional clearing-houses covering broad-based sectors of the economy such as agriculture, industry and energy. Such a network might, inter alia, include national, subregional and regional patent offices that are equipped to produce reports on state-of-the-art technology. The clearing-house networks would disseminate information on available technologies, their sources, their environmental risks, and the broad terms under which they may be acquired. They would operate on an information-demand basis and focus on the information needs of the end-users. They would take into account the positive roles and contributions of international, regional and subregional organizations, business communities, trade associations, non-governmental organizations, national Governments, and newly established or strengthened national networks.

34.16. The international and regional clearing-houses would take the initiative, where necessary, in helping users to identify their needs and in disseminating information that meets those needs, including the use of existing news, public information, and communication systems. The disseminated information would highlight and detail concrete cases where environmentally sound technologies were successfully developed and implemented. In order to be effective, the clearing-houses need to provide not only information, but also referrals to other services, including sources of advice, training, technologies and technology assessment. The clearing-houses would thus facilitate the establishment of joint ventures and partnerships of various kinds.

34.17. An inventory of existing and international or regional clearing-houses or information exchange systems should be undertaken by the relevant United Nations bodies. The existing structure should be strengthened and improved when necessary. Additional information systems should be developed, if necessary, in order to fill identified gaps in this international network.

(b) Support of and promotion of access to transfer of technology

34.18. Governments and international organizations should promote, and encourage the private sector to promote, effective modalities for the access and transfer, in particular to developing countries, of environmentally sound technologies by means of activities, including the following:

(a) Formulation of policies and programmes for the effective transfer of environmentally sound technologies that are publicly owned or in the public domain;

(b) Creation of favourable conditions to encourage the private and public sectors to innovate, market and use environmentally sound technologies;

(c) Examination by Governments and, where appropriate, by relevant organizations of existing policies, including subsidies and tax policies, and regulations to determine whether they encourage or impede the access to, transfer of and introduction of environmentally sound technologies;

(d) Addressing, in a framework which fully integrates environment and development, barriers to the transfer of privately owned environmentally sound technologies and adoption of appropriate general measures to reduce such barriers while creating specific incentives, fiscal or otherwise, for the transfer of such technologies;

(e) In the case of privately owned technologies, the adoption of the following measures, in particular for developing countries:

(i) Creation and enhancement by developed countries, as well as other countries which might be in a position to do so, of appropriate incentives, fiscal or otherwise, to stimulate the transfer of environmentally sound technology by companies, in particular to developing countries, as integral to sustainable development;

(ii) Enhancement of the access to and transfer of patent protected environmentally sound technologies, in particular to developing countries;

(iii) Purchase of patents and licences on commercial terms for their transfer to developing countries on non-commercial terms as part of development cooperation for sustainable development, taking into account the need to protect intellectual property rights;

(iv) In compliance with and under the specific circumstances recognized by the relevant international conventions adhered to by States, the undertaking of measures to prevent the abuse of intellectual property rights, including rules with respect to their acquisition through compulsory licensing, with the provision of equitable and adequate compensation;

(v) Provision of financial resources to acquire environmentally sound technologies in order to enable in particular developing countries to implement measures to promote sustainable development that would entail a special or abnormal burden to them;

(f) Development of mechanisms for the access to and transfer of environmentally sound technologies, in particular to developing countries, while taking into account development in the process of negotiating an international code of conduct on transfer of technology, as decided by UNCTAD at its eighth session, held at Cartagena de Indias, Colombia, in February 1992.

(c) Improvement of the capacity to develop and manage environmentally sound technologies

34.19. Frameworks at subregional, regional and international levels should be established and/or strengthened for the development, transfer and application of environmentally sound technologies and corresponding technical know-how with a special focus on developing countries' needs, by adding such functions to already existing bodies. Such frameworks would facilitate initiatives from both developing and developed countries to stimulate the research, development and transfer of environmentally sound technologies, often through partnerships within and among countries and between the scientific and technological community, industry and Governments.

34.20. National capacities to assess, develop, manage and apply new technologies should be developed. This will require strengthening existing institutions, training of personnel at all levels, and education of the end-user of the technology.

(d) Establishment of a collaborative network of research centres

34.21. A collaborative network of national, subregional, regional and international research centres on environmentally sound technology should be established to enhance the access to and development, management and transfer of environmentally sound technologies, including transfer and cooperation among developing countries and between developed and developing countries, primarily based on existing subregional or regional research, development and demonstration centres which are linked with the national institutions, in close cooperation with the private sector.

(e) Support for programmes of cooperation and assistance

34.22. Support should be provided for programmes of cooperation and assistance, including those provided by United Nations agencies, international organizations, and other appropriate public and private organizations, in particular to developing countries, in the areas of research and development, technological and human resources capacity-building in the fields of training, maintenance, national technology needs assessments, environmental impact assessments, and sustainable development planning.

34.23. Support should also be provided for national, subregional, regional, multilateral and bilateral programmes of scientific research, dissemination of information and technology development among developing countries, including through the involvement of both public and private enterprises and research facilities, as well as funding for technical cooperation among developing countries' programmes in this area. This should include developing links among these facilities to maximize their efficiency in understanding, disseminating and implementing technologies for sustainable development.

34.24. The development of global, regional and subregional programmes should include identification and evaluation of regional, subregional and national need-based priorities. Plans and studies supporting these programmes should provide the basis for potential financing by multilateral development banks, bilateral organizations, private sector interests and non-governmental organizations.

34.25. Visits should be sponsored and, on a voluntary basis, the return of qualified experts from developing countries in the field of environmentally sound technologies who are currently working in developed country institutions should be facilitated.

(f) Technology assessment in support of the management of environmentally sound technology

34.26. The international community, in particular United Nations agencies, international organizations, and other appropriate and private organizations should help exchange experiences and develop capacity for technology needs assessment, in particular in developing countries, to enable them to make choices based on environmentally sound technologies. They should:

(a) Build up technology assessment capacity for the management of environmentally sound technology, including environmental impact and risk assessment, with due regard to appropriate safeguards on the transfer of technologies subject to prohibition on environmental or health grounds;

(b) Strengthen the international network of regional, subregional or national environmentally sound technology assessment centres, coupled with clearing-houses, to tap the technology assessment sources mentioned above for the benefit of all nations. These centres could, in principle, provide advice and training for specific national situations and promote the building up of national capacity in environmentally sound technology assessment. The possibility of assigning this activity to already existing regional organizations should be fully explored before creating entirely new institutions, and funding of this activity through public-private partnerships should also be explored, as appropriate.

(g) Collaborative arrangements and partnerships

34.27. Long-term collaborative arrangements should be promoted between enterprises of developed and developing countries for the development of environmentally sound technologies. Multinational companies, as repositories of scarce technical skills needed for the protection and enhancement of the environment, have a special role and interest in promoting cooperation in and related to technology transfer, as they are important channels for such transfer, and for building a trained human resource pool and infrastructure.

34.28. Joint ventures should be promoted between suppliers and recipients of technologies, taking into account developing countries' policy priorities and objectives. Together with direct foreign investment, these ventures could constitute important channels of transferring environmentally sound technologies. Through such joint ventures and direct investment, sound environmental management practices could be transferred and maintained.

MEANS OF IMPLEMENTATION

Financing and cost evaluation

34.29. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this chapter to be between $450 million and $600 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

Chapter 35

SCIENCE FOR SUSTAINABLE DEVELOPMENT

INTRODUCTION

35.1. This chapter focuses on the role and the use of the sciences in supporting the prudent management of the environment and development for the daily survival and future development of humanity. The programme areas proposed herein are intended to be over-arching, in order to support the specific scientific requirements identified in the other Agenda 21 chapters. One role of the sciences should be to provide information to better enable formulation and selection of environment and development policies in the decision-making process. In order to fulfil this requirement, it will be essential to enhance scientific understanding, improve long-term scientific assessments, strengthen scientific capacities in all countries and ensure that the sciences are responsive to emerging needs.

35.2. Scientists are improving their understanding in areas such as climatic change, growth in rates of resource consumption, demographic trends, and environmental degradation. Changes in those and other areas need to be taken into account in working out long-term strategies for development. A first step towards improving the scientific basis for these strategies is a better understanding of land, oceans, atmosphere and their interlocking water, nutrient and biogeochemical cycles and energy flows which all form part of the Earth system. This is essential if a more accurate estimate is to be provided of the carrying capacity of the planet Earth and of its resilience under the many stresses placed upon it by human activities. The sciences can provide this understanding through increased research into the underlying ecological processes and through the application of modern, effective and efficient tools that are now available, such as remote-sensing devices, robotic monitoring instruments and computing and modelling capabilities. The sciences are playing an important role in linking the fundamental significance of the Earth system as life support to appropriate strategies for development which build on its continued functioning. The sciences should continue to play an increasing role in providing for an improvement in the efficiency of resource utilization and in finding new development practices, resources, and alternatives. There is a need for the sciences constantly to reassess and promote less intensive trends in resource utilization, including less intensive utilization of energy in industry, agriculture, and transportation. Thus, the sciences are increasingly being understood as an essential component in the search for feasible pathways towards sustainable development.

35.3. Scientific knowledge should be applied to articulate and support the goals of sustainable development, through scientific assessments of current conditions and future prospects for the Earth system. Such assessments, based on existing and emerging innovations within the sciences, should be used in the decision-making process and in the interactive processes between the sciences and policy-making. There needs to be an increased output from the sciences in order to enhance understanding and facilitate interaction between science and society. An increase in the scientific capacity and capability to achieve these goals will also be required, particularly in developing countries. Of crucial importance is the need for scientists in developing countries to participate fully in international scientific research programmes dealing with the global problems of environment and development so as to allow all countries to participate on equal footing in negotiations on global environmental and developmental issues. In the face of threats of irreversible environmental damage, lack of full scientific understanding should not be an excuse for postponing actions which are justified in their own right. The precautionary approach could provide a basis for policies relating to complex systems that are not yet fully understood and whose consequences of disturbances cannot yet be predicted.

35.4. The programme areas, which are in harmony with the conclusions and recommendations of the International Conference on an Agenda of Science for Environment and Development into the 21st Century (ASCEND 21) are:

(a) Strengthening the scientific basis for sustainable management;

(b) Enhancing scientific understanding;

(c) Improving long-term scientific assessment;

(d) Building up scientific capacity and capability.

PROGRAMME AREAS

A. Strengthening the scientific basis for sustainable management

Basis for action

35.5. Sustainable development requires taking longer-term perspectives, integrating local and regional effects of global change into the development process, and using the best scientific and traditional knowledge available. The development process should be constantly re-evaluated, in light of the findings of scientific research, to ensure that resource utilization has reduced impacts on the Earth system. Even so, the future is uncertain, and there will be surprises. Good environmental and developmental management policies must therefore be scientifically robust, seeking to keep open a range of options to ensure flexibility of response. The precautionary approach is important. Often, there is a communication gap among scientists, policy makers, and the public at large, whose interests are articulated by both governmental and non-governmental organizations. Better communication is required among scientists, decision makers, and the general public.

Objectives

35.6. The primary objective is for each country with the support of international organizations, as requested, to identify the state of its scientific knowledge and its research needs and priorities in order to achieve, as soon as possible, substantial improvements in:

(a) Large-scale widening of the scientific base and strengthening of scientific and research capacities and capabilities - in particular, those of developing countries - in areas relevant to environment and development;

(b) Environmental and developmental policy formulation, building upon the best scientific knowledge and assessments, and taking into account the need to enhance international cooperation and the relative uncertainties of the various processes and options involved;

(c) The interaction between the sciences and decision-making, using the precautionary approach, where appropriate, to change the existing patterns of production and consumption and to gain time for reducing uncertainty with respect to the selection of policy options;

(d) The generation and application of knowledge, especially indigenous and local knowledge, to the capacities of different environments and cultures, to achieve sustained levels of development, taking into account interrelations at the national, regional and international levels;

(e) Improving cooperation between scientists by promoting interdisciplinary research programmes and activities;

(f) Participation of people in setting priorities and in decision-making relating to sustainable development.

Activities

35.7. Countries, with the assistance of international organizations, where required, should:

(a) Prepare an inventory of their natural and social science data holdings relevant to the promotion of sustainable development;

(b) Identify their research needs and priorities in the context of international research efforts;

(c) Strengthen and design appropriate institutional mechanisms at the highest appropriate local, national, subregional and regional levels and within the United Nations system for developing a stronger scientific basis for the improvement of environmental and developmental policy formulation consistent with long-term goals of sustainable development. Current research in this area should be broadened to include more involvement of the public in establishing long-term societal goals for formulating the sustainable development scenarios;

(d) Develop, apply and institute the necessary tools for sustainable development, with regard to:

- (i) Quality-of-life indicators covering, for example, health, education, social welfare, state of the environment, and the economy;
- (ii) Economic approaches to environmentally sound development and new and improved incentive structures for better resource management;
- (iii) Long-term environmental policy formulation, risk management and environmentally sound technology assessment;

(e) Collect, analyse and integrate data on the linkages between the state of ecosystems and the health of human communities in order to improve knowledge of the cost and benefit of different development policies and strategies in relation to health and the environment, particularly in developing countries;

(f) Conduct scientific studies of national and regional pathways to sustainable development, using comparable and complementary methodologies. Such studies, coordinated by an international science effort, should to a large extent involve local expertise and be conducted by multidisciplinary teams from regional networks and/or research centres, as appropriate and according to national capacities and the available resources;

(g) Improve capabilities for determining scientific research priorities at the national, regional and global levels to meet the needs of sustainable development. This is a process that involves scientific judgements regarding short-term and long-term benefits and possible long-term costs and risks. It should be adaptive and responsive to perceived needs and be carried out via transparent, "user-friendly", risk-evaluation methodologies;

(h) Develop methods to link the findings of the established sciences with the indigenous knowledge of different cultures. The methods should be tested using pilot studies. They should be developed at the local level and should concentrate on the links between the traditional knowledge of indigenous groups and corresponding, current "advanced science", with particular focus on disseminating and applying the results to environmental protection and sustainable development.

Means of implementation

(a) Financing and cost evaluation

35.8. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $150 million, including about $30 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

35.9. The scientific and technological means include the following:

(a) Supporting new scientific research programmes, including their socio-economic and human aspects, at the community, national, subregional, regional and global levels, to complement and encourage synergies between traditional and conventional scientific knowledge and practices and strengthening interdisciplinary research related to environmental degradation and rehabilitation;

(b) Setting up demonstration models of different types (e.g., socio-economic, environmental conditions) to study methodologies and formulate guidelines;

(c) Supporting research by developing relative-risk evaluation methods to assist policy makers in ranking scientific research priorities.

B. Enhancing scientific understanding

Basis for action

35.10. In order to promote sustainable development, more extensive knowledge is required of the Earth's carrying capacity, including the processes that could either impair or enhance its ability to support life. The global environment is changing more rapidly than at any time in recent centuries; as a result, surprises may be expected, and the next century could see significant environmental changes. At the same time, the human consumption of energy, water and non-renewable resources is increasing, on both a total and a per capita basis, and shortages may ensue in many parts of the world even if environmental conditions were to remain unchanged. Social processes are subject to multiple variations across time and space, regions and culture. They both affect and are influenced by changing environmental conditions. Human factors are key driving forces in these intricate sets of relationships and exert their influence directly on global change. Therefore, study of the human dimensions of the causes and consequences of environmental change and of more sustainable development paths is essential.

Objectives

35.11. One key objective is to improve and increase the fundamental understanding of the linkages between human and natural environmental systems and improve the analytical and predictive tools required to better understand the environmental impacts of development options by:

(a) Carrying out research programmes in order better to understand the carrying capacity of the Earth as conditioned by its natural systems, such as the biogeochemical cycles, the atmosphere/hydrosphere/lithosphere/cryosphere system, the biosphere and biodiversity, the agro-ecosystem and other terrestrial and aquatic ecosystems;

(b) Developing and applying new analytical and predictive tools in order to assess more accurately the ways in which the Earth's natural systems are being increasingly influenced by human actions, both deliberate and inadvertent, and demographic trends, and the impact and consequences of those actions and trends;

(c) Integrating physical, economic and social sciences in order better to understand the impacts of economic and social behaviour on the environment and of environmental degradation on local and global economies.

Activities

35.12. The following activities should be undertaken:

(a) Support development of an expanded monitoring network to describe cycles (for example, global, biogeochemical and hydrological cycles) and test hypotheses regarding their behaviour, and improve research into the interactions among the various global cycles and their consequences at national, subregional, regional and global levels as guides to tolerance and vulnerability;

(b) Support national, subregional, regional and international observation and research programmes in global atmospheric chemistry and the sources and sinks of greenhouse gases, and ensure that the results are presented in a publicly accessible and understandable form;

(c) Support national, subregional, regional and international research programmes on marine and terrestrial systems, strengthen global terrestrial databases of their components, expand corresponding systems for monitoring their changing states and enhance predictive modelling of the Earth system and its subsystems, including modelling of the functioning of these systems assuming different intensities of human impact. The research programmes should include the programmes mentioned in other Agenda 21 chapters which support mechanisms for cooperation and coherence of research programmes on global change;

(d) Encourage coordination of satellite missions, the networks, systems and procedures for processing and disseminating their data; and develop the interface with the research users of Earth observation data and with the United Nations EARTHWATCH system;

(e) Develop the capacity for predicting the responses of terrestrial, freshwater, coastal and marine ecosystems and biodiversity to short- and long-term perturbations of the environment, and develop further restoration ecology;

(f) Study the role of biodiversity and the loss of species in the functioning of ecosystems and the global life-support system;

(g) Initiate a global observing system of parameters needed for the rational management of coastal and mountain zones and significantly expand freshwater quantity/quality monitoring systems, particularly in developing countries;

(h) In order to understand the Earth as a system, develop Earth observation systems from space which will provide integrated, continuous and long-term measurements of the interactions of the atmosphere, hydrosphere and lithosphere, and develop a distribution system for data which will facilitate the utilization of data obtained through observation;

(i) Develop and apply systems and technology that automatically collect, record and transmit data and information to data and analysis centres, in order to monitor marine, terrestrial and atmospheric processes and provide advance warning of natural disasters;

(j) Enhance the contribution of the engineering sciences to multidisciplinary research programmes on the Earth system, in particular with regard to increasing emergency preparedness and reducing the negative effects of major natural disasters;

(k) Intensify research to integrate the physical, economic and social sciences to better understand the impacts of economic and social behaviour on the environment and of environmental degradation on local and global economies and, in particular:

(i) Develop research on human attitudes and behaviour as driving forces central to an understanding of the causes and consequences of environmental change and resource use;

(ii) Promote research on human, economic and social responses to global change;

(l) Support development of new user-friendly technologies and systems that facilitate the integration of multidisciplinary, physical, chemical, biological and social/human processes which, in turn, provide information and knowledge for decision makers and the general public.

Means of implementation

(a) Financing and cost evaluation

35.13. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $2 billion, including about $1.5 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

35.14. The scientific and technological means include the following:

(a) Supporting and using the relevant national research activities of academia, research institutes and governmental and non-governmental organizations, and promoting their active participation in regional and global programmes, particularly in developing countries;

(b) Increasing the use of appropriate enabling systems and technologies, such as supercomputers, space-based observational technology, Earth- and ocean-based observational technologies, data management and database technologies and, in particular, developing and expanding the Global Climate Observing System.

C. Improving long-term scientific assessment

Basis for action

35.15. Meeting scientific research needs in the environment/development field is only the first step in the support that the sciences can provide for the sustainable development process. The knowledge acquired may then be used to provide scientific assessments (audits) of the current status and for a range of possible future conditions. This implies that the biosphere must be maintained in a healthy state and that losses in biodiversity must be slowed down. Although many of the long-term environmental changes that are likely to affect people and the biosphere are global in scale, key changes can often be made at the national and local levels. At the same time, human activities at the local and regional levels often contribute to global threats - e.g., stratospheric ozone depletion. Thus scientific assessments and projections are required at the global, regional and local levels. Many countries and organizations already prepare reports on the environment and development which review current conditions and indicate future trends. Regional and global assessments could make full use of such reports but should be broader in scope and include the results of detailed studies of future conditions for a range of assumptions about possible future human responses, using the best available models. Such assessments should be designed to map out manageable development pathways within the environmental and socio-economic carrying capacity of each region. Full use should be made of traditional knowledge of the local environment.

Objectives

35.16. The primary objective is to provide assessments of the current status and trends in major developmental and environmental issues at the national, subregional, regional and global levels on the basis of the best available scientific knowledge in order to develop alternative strategies, including indigenous approaches, for the different scales of time and space required for long-term policy formulation.

Activities

35.17. The following activities should be undertaken:

(a) Coordinate existing data- and statistics-gathering systems relevant to developmental and environmental issues so as to support preparation of long-term scientific assessments - for example, data on resource depletion, import/export flows, energy use, health impacts and demographic trends; apply the data obtained through the activities identified in programme area B to environment/development assessments at the global, regional and local levels; and promote the wide distribution of the assessments in a form that is responsive to public needs and can be widely understood;

(b) Develop a methodology to carry out national and regional audits and a five-year global audit on an integrated basis. The standardized audits should help to refine the pattern and character of development, examining in particular the capacities of global and regional life-supporting systems to meet the needs of human and non-human life forms and identifying areas and resources vulnerable to further degradation. This task would involve the integration of all relevant sciences at the national, regional, and global levels, and would be organized by governmental agencies, non-governmental organizations, universities and research institutions, assisted by international governmental and non-governmental organizations and United Nations bodies, when necessary and as appropriate. These audits should then be made available to the general public.

Means of implementation

Financing and cost evaluation

35.18. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $35 million, including about $18 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

35.19. With regard to the existing data requirements under programme area A, support should be provided for national data collection and warning systems. This would involve setting up database, information and reporting systems, including data assessment and information dissemination in each region.

D. Building up scientific capacity and capability

Basis for action

35.20. In view of the increasing role the sciences have to play in dealing with the issues of environment and development, it is necessary to build up scientific capacity and strengthen such capacity in all countries - particularly in developing countries - to enable them to participate fully in the generation and application of the results of scientific research and development concerning sustainable development. There are many ways to build up scientific and technological capacity. Some of the most important of them are the following: education and training in science and technology; assistance to developing countries to improve infrastructures for research and development which could enable scientists to work more productively; development of incentives to encourage research and development; and greater utilization of their results in the productive sectors of the economy. Such capacity-building would also form the basis for improving public awareness and understanding of the sciences. Special emphasis must be put on the need to assist developing countries to strengthen their capacities to study their own resource bases and ecological systems and manage them better in order to meet national, regional and global challenges. Furthermore, in view of the size and complexity of global environmental problems, a need for more specialists in several disciplines has become evident world wide.

Objectives

35.21. The primary objective is to improve the scientific capacities of all countries - in particular, those of developing countries - with specific regard to:

(a) Education, training and facilities for local research and development and human resource development in basic scientific disciplines and in environment-related sciences, utilizing where appropriate traditional and local knowledge of sustainability;

(b) A substantial increase by the year 2000 in the number of scientists - particularly women scientists - in those developing countries where their number is at present insufficient;

(c) Reducing significantly the exodus of scientists from developing countries and encouraging those who have left to return;

(d) Improving access to relevant information for scientists and decision makers, with the aim of improving public awareness and participation in decision-making;

(e) Involvement of scientists in national, regional and global environmental and developmental research programmes, including multidisciplinary research;

(f) Periodic academic update of scientists from developing countries in their respective fields of knowledge.

Activities

35.22. The following activities should be undertaken:

(a) Promote the education and training of scientists, not only in their disciplines but also in their ability to identify, manage and incorporate environmental considerations into research and development projects; ensure that a sound base in natural systems, ecology and resource management is provided; and develop specialists capable of working in interdisciplinary programmes related to environment and development, including the field of applied social sciences;

(b) Strengthen the scientific infrastructure in schools, universities and research institutions - particularly those in developing countries - by the provision of adequate scientific equipment and access to current scientific literature, for the purpose of achieving and sustaining a critical mass of highly qualified scientists in these countries;

(c) Develop and expand national scientific and technological databases, processing data in unified formats and systems, and allowing full and open access to the depository libraries of regional scientific and technological information networks. Promote submission of scientific and technological information and databases to global or regional data centres and network systems;

(d) Develop and expand regional and global scientific and technological information networks which are based on and linked to national scientific and technological databases; collect, process and disseminate information from regional and global scientific programmes; expand activities to reduce information barriers due to language differences. Increase the applications - particularly in developing countries - of computer-based retrieval systems in order to cope with the growth of scientific literature;

(e) Develop, strengthen and forge new partnerships among national, regional and global capacities to promote the full and open exchange of scientific and technological data and information and to facilitate technical assistance related to environmentally sound and sustainable development. This should be done through the development of mechanisms for the sharing of basic research, data and information, and the improvement and development of international networks and centres, including regional linking with national scientific databases, for research, training and monitoring. Such mechanisms should be designed so as to enhance professional cooperation among scientists in all countries and to establish strong national and regional alliances between industry and research institutions;

(f) Improve and develop new links between existing networks of natural and social scientists and universities at the international level in order to strengthen national capacities in the formulation of policy options in the field of environment and development;

(g) Compile, analyse and publish information on indigenous environmental and developmental knowledge, and assist the communities that possess such knowledge to benefit from them.

Means of implementation

(a) Financing and cost evaluation

35.23. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $750 million, including about $470 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

35.24. Such means include increasing and strengthening regional multidisciplinary research and training networks and centres making optimal use of existing facilities and associated sustainable development and technology support systems in developing regions. Promote and use the potential of independent initiatives and indigenous innovations and entrepreneurship. The function of such networks and centres could include, for example:

(a) Support and coordination of scientific cooperation among all nations in the region;

(b) Linking with monitoring centres and carrying out assessment of environmental and developmental conditions;

(c) Support and coordination of national studies of pathways towards sustainable development;

(d) Organization of science education and training;

(e) Establishment and maintenance of information, monitoring and assessment systems and databases.

(c) Capacity-building

35.25. Capacity-building includes the following:

(a) Creating conditions (e.g., salaries, equipment, libraries) to ensure that the scientists will work effectively in their home countries;

(b) Enhancing national, regional and global capacities for carrying out scientific research and applying scientific and technological information to environmentally sound and sustainable development. This includes a need to increase financial resources for global and regional scientific and technological information networks, as may be appropriate, so that they will be able to function effectively and efficiently in satisfying the scientific needs of developing countries. Ensure the capacity-building of women by recruiting more women in research and research training.

Chapter 36

PROMOTING EDUCATION, PUBLIC AWARENESS AND TRAINING

INTRODUCTION

36.1. Education, raising of public awareness and training are linked to virtually all areas in Agenda 21, and even more closely to the ones on meeting basic needs, capacity-building, data and information, science, and the role of major groups. This chapter sets out broad proposals, while specific suggestions related to sectoral issues are contained in other chapters. The Declaration and Recommendations of the Tbilisi Intergovernmental Conference on Environmental Education 1/ organized by UNESCO and UNEP and held in 1977, have provided the fundamental principles for the proposals in this document.

36.2. Programme areas described in the present chapter are:

(a) Reorienting education towards sustainable development;

(b) Increasing public awareness;

(c) Promoting training.

PROGRAMME AREAS

A. Reorienting education towards sustainable development

Basis for action

36.3. Education, including formal education, public awareness and training should be recognized as a process by which human beings and societies can reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues. While basic education provides the underpinning for any environmental and development education, the latter needs to be incorporated as an essential part of learning. Both formal and non-formal education are indispensable to changing people's attitudes so that they have the capacity to assess and address their sustainable development concerns. It is also critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decision-making. To be effective, environment and development education should deal with the dynamics of both the physical/biological and socio-economic environment and human (which may include spiritual) development, should be integrated in all disciplines, and should employ formal and non-formal methods and effective means of communication.

Objectives

36.4. Recognizing that countries, regional and international organizations will develop their own priorities and schedules for implementation in accordance with their needs, policies and programmes, the following objectives are proposed:

(a) To endorse the recommendations arising from the World Conference on Education for All: Meeting Basic Learning Needs 2/ (Jomtien, Thailand, 5-9 March 1990) and to strive to ensure universal access to basic education, and to achieve primary education for at least 80 per cent of girls and 80 per cent of boys of primary school age through formal schooling or non-formal education and to reduce the adult illiteracy rate to at least half of its 1990 level. Efforts should focus on reducing the high illiteracy levels and redressing the lack of basic education among women and should bring their literacy levels into line with those of men;

(b) To achieve environmental and development awareness in all sectors of society on a world-wide scale as soon as possible;

(c) To strive to achieve the accessibility of environmental and development education, linked to social education, from primary school age through adulthood to all groups of people;

(d) To promote integration of environment and development concepts, including demography, in all educational programmes, in particular the analysis of the causes of major environment and development issues in a local context, drawing on the best available scientific evidence and other appropriate sources of knowledge, and giving special emphasis to the further training of decision makers at all levels.

Activities

36.5. Recognizing that countries and regional and international organizations will develop their own priorities and schedules for implementation in accordance with their needs, policies and programmes, the following activities are proposed:

(a) All countries are encouraged to endorse the recommendations of the Jomtien Conference and strive to ensure its Framework for Action. This would encompass the preparation of national strategies and actions for meeting basic learning needs, universalizing access and promoting equity, broadening the means and scope of education, developing a supporting policy context, mobilizing resources and strengthening international cooperation to redress existing economic, social and gender disparities which interfere with these aims. Non-governmental organizations can make an important contribution in designing and implementing educational programmes and should be recognized;

(b) Governments should strive to update or prepare strategies aimed at integrating environment and development as a cross-cutting issue into education at all levels within the next three years. This should be done in cooperation with all sectors of society. The strategies should set out policies and activities, and identify needs, cost, means and schedules for their implementation, evaluation and review. A thorough review of curricula should be undertaken to ensure a multidisciplinary approach, with environment and development issues and their socio-cultural and demographic aspects and linkages. Due respect should be given to community-defined needs and diverse knowledge systems, including science, cultural and social sensitivities;

(c) Countries are encouraged to set up national advisory environmental education coordinating bodies or round tables representative of various environmental, developmental, educational, gender and other interests, including non-governmental organizations, to encourage partnerships, help mobilize resources, and provide a source of information and focal point for international ties. These bodies would help mobilize and facilitate different population groups and communities to assess their own needs and to develop the necessary skills to create and implement their own environment and development initiatives;

(d) Educational authorities, with the appropriate assistance from community groups or non-governmental organizations, are recommended to assist or set up pre-service and in-service training programmes for all teachers, administrators, and educational planners, as well as non-formal educators in all sectors, addressing the nature and methods of environmental and development education and making use of relevant experience of non-governmental organizations;

(e) Relevant authorities should ensure that every school is assisted in designing environmental activity work plans, with the participation of students and staff. Schools should involve schoolchildren in local and regional studies on environmental health, including safe drinking water, sanitation and food and ecosystems and in relevant activities, linking these studies with services and research in national parks, wildlife reserves, ecological heritage sites etc.;

(f) Educational authorities should promote proven educational methods and the development of innovative teaching methods for educational settings. They should also recognize appropriate traditional education systems in local communities;

(g) Within two years the United Nations system should undertake a comprehensive review of its educational programmes, encompassing training and public awareness, to reassess priorities and reallocate resources. The UNESCO/UNEP International Environmental Education Programme should, in cooperation with the appropriate bodies of the United Nations system, Governments, non-governmental organizations and others, establish a programme within two years to integrate the decisions of the Conference into the existing United Nations framework adapted to the needs of educators at different levels and circumstances. Regional organizations and national authorities should be encouraged to elaborate similar parallel programmes and opportunities by conducting an analysis of how to mobilize different sectors of the population in order to assess and address their environmental and development education needs;

(h) There is a need to strengthen, within five years, information exchange by enhancing technologies and capacities necessary to promote environment and development education and public awareness. Countries should cooperate with each other and with the various social sectors and population groups to prepare educational tools that include regional environment and development issues and initiatives, using learning materials and resources suited to their own requirements;

(i) Countries could support university and other tertiary activities and networks for environmental and development education. Cross-disciplinary courses could be made available to all students. Existing regional networks and activities and national university actions which promote research and common teaching approaches on sustainable development should be built upon, and new partnerships and bridges created with the business and other independent sectors, as well as with all countries for technology, know-how, and knowledge exchange;

(j) Countries, assisted by international organizations, non-governmental organizations and other sectors, could strengthen or establish national or regional centres of excellence in interdisciplinary research and education in environmental and developmental sciences, law and the management of specific environmental problems. Such centres could be universities or existing networks in each country or region, promoting cooperative research and information sharing and dissemination. At the global level these functions should be performed by appropriate institutions;

(k) Countries should facilitate and promote non-formal education activities at the local, regional and national levels by cooperating with and supporting the efforts of non-formal educators and other community-based organizations. The appropriate bodies of the United Nations system in cooperation with non-governmental organizations should encourage the development of an international network for the achievement of global educational aims. At the national and local levels, public and scholastic forums should discuss environmental and development issues, and suggest sustainable alternatives to policy makers;

(l) Educational authorities, with appropriate assistance of non-governmental organizations, including women's and indigenous peoples' organizations, should promote all kinds of adult education programmes for continuing education in environment and development, basing activities around elementary/secondary schools and local problems. These authorities and industry should encourage business, industrial and agricultural schools to include such topics in their curricula. The corporate sector could include sustainable development in their education and training programmes.

Programmes at a post-graduate level should include specific courses aiming at the further training of decision makers;

(m) Governments and educational authorities should foster opportunities for women in non-traditional fields and eliminate gender stereotyping in curricula. This could be done by improving enrolment opportunities, including females in advanced programmes as students and instructors, reforming entrance and teacher staffing policies and providing incentives for establishing child-care facilities, as appropriate. Priority should be given to education of young females and to programmes promoting literacy among women;

(n) Governments should affirm the rights of indigenous peoples, by legislation if necessary, to use their experience and understanding of sustainable development to play a part in education and training;

(o) The United Nations could maintain a monitoring and evaluative role regarding decisions of the United Nations Conference on Environment and Development on education and awareness, through the relevant United Nations agencies. With Governments and non-governmental organizations, as appropriate, it should present and disseminate decisions in a variety of forms, and should ensure the continuous implementation and review of the educational implications of Conference decisions, in particular through relevant events and conferences.

Means of implementation

Financing and cost evaluation

36.6. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $8 billion to $9 billion, including about $3.5 billion to $4.5 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

36.7. In the light of country-specific situations, more support for education, training and public awareness activities related to environment and development could be provided, in appropriate cases, through measures such as the following:

(a) Giving higher priority to those sectors in budget allocations, protecting them from structural cutting requirements;

(b) Shifting allocations within existing education budgets in favour of primary education, with focus on environment and development;

(c) Promoting conditions where a larger share of the cost is borne by local communities, with rich communities assisting poorer ones;

(d) Obtaining additional funds from private donors concentrating on the poorest countries, and those with rates of literacy below 40 per cent;

(e) Encouraging debt for education swaps;

(f) Lifting restrictions on private schooling and increasing the flow of funds from and to non-governmental organizations, including small-scale grass-roots organizations;

(g) Promoting the effective use of existing facilities, for example, multiple school shifts, fuller development of open universities and other long-distance teaching;

(h) Facilitating low-cost or no-cost use of mass media for the purposes of education;

(i) Encouraging twinning of universities in developed and developing countries.

B. Increasing public awareness

Basis for action

36.8. There is still a considerable lack of awareness of the interrelated nature of all human activities and the environment, due to inaccurate or insufficient information. Developing countries in particular lack relevant technologies and expertise. There is a need to increase public sensitivity to environment and development problems and involvement in their solutions and foster a sense of personal environmental responsibility and greater motivation and commitment towards sustainable development.

Objective

36.9. The objective is to promote broad public awareness as an essential part of a global education effort to strengthen attitudes, values and actions which are compatible with sustainable development. It is important to stress the principle of devolving authority, accountability and resources to the most appropriate level with preference given to local responsibility and control over awareness-building activities.

Activities

36.10. Recognizing that countries, regional and international organizations will develop their own priorities and schedules for implementation in accordance with their needs, policies and programmes, the following activities are proposed:

(a) Countries should strengthen existing advisory bodies or establish new ones for public environment and development information, and should coordinate activities with, among others, the United Nations, non-governmental organizations and important media. They should encourage public participation in discussions of environmental policies and assessments. Governments should also facilitate and support national to local networking of information through existing networks;

(b) The United Nations system should improve its outreach in the course of a review of its education and public awareness activities to promote greater involvement and coordination of all parts of the system, especially its information bodies and regional and country operations. Systematic surveys of the impact of awareness programmes should be conducted, recognizing the needs and contributions of specific community groups;

(c) Countries and regional organizations should be encouraged, as appropriate, to provide public environmental and development information services for raising the awareness of all groups, the private sector and particularly decision makers;

(d) Countries should stimulate educational establishments in all sectors, especially the tertiary sector, to contribute more to awareness building. Educational materials of all kinds and for all audiences should be based on the best available scientific information, including the natural, behavioural and social sciences, and taking into account aesthetic and ethical dimensions;

(e) Countries and the United Nations system should promote a cooperative relationship with the media, popular theatre groups, and entertainment and advertising industries by initiating discussions to mobilize their experience in shaping public behaviour and consumption patterns and making wide use of their methods. Such cooperation would also increase the active public participation in the debate on the environment. UNICEF should make child-oriented material available to media as an educational tool, ensuring close cooperation between the out-of-school public information sector and the school curriculum, for the primary level. UNESCO, UNEP and universities should enrich pre-service curricula for journalists on environment and development topics;

(f) Countries, in cooperation with the scientific community, should establish ways of employing modern communication technologies for effective public outreach. National and local educational authorities and relevant United Nations agencies should expand, as appropriate, the use of audio-visual methods, especially in rural areas in mobile units, by producing television and radio programmes for developing countries, involving local participation, employing interactive multimedia methods and integrating advanced methods with folk media;

(g) Countries should promote, as appropriate, environmentally sound leisure and tourism activities, building on The Hague Declaration of Tourism (1989) and the current programmes of the World Tourism Organization and UNEP, making suitable use of museums, heritage sites, zoos, botanical gardens, national parks, and other protected areas;

(h) Countries should encourage non-governmental organizations to increase their involvement in environmental and development problems, through joint awareness initiatives and improved interchange with other constituencies in society;

(i) Countries and the United Nations system should increase their interaction with and include, as appropriate, indigenous people in the management, planning and development of their local environment, and should promote dissemination of traditional and socially learned knowledge through means based on local customs, especially in rural areas, integrating these efforts with the electronic media, whenever appropriate;

(j) UNICEF, UNESCO, UNDP and non-governmental organizations should develop support programmes to involve young people and children in environment and development issues, such as children's and youth hearings and building on decisions of the World Summit for Children (A/45/625, annex);

(k) Countries, the United Nations and non-governmental organizations should encourage mobilization of both men and women in awareness campaigns, stressing the role of the family in environmental activities, women's contribution to transmission of knowledge and social values and the development of human resources;

(l) Public awareness should be heightened regarding the impacts of violence in society.

Means of implementation

Financing and cost evaluation

36.11. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.2 billion, including about $110 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

C. Promoting training

Basis for action

36.12. Training is one of the most important tools to develop human resources and facilitate the transition to a more sustainable world. It should have a job-specific focus, aimed at filling gaps in knowledge and skill that would help individuals find employment and be involved in environmental and development work. At the same time, training programmes should promote a greater awareness of environment and development issues as a two-way learning process.

Objectives

36.13. The following objectives are proposed:

(a) To establish or strengthen vocational training programmes that meet the needs of environment and development with ensured access to training opportunities, regardless of social status, age, gender, race or religion;

(b) To promote a flexible and adaptable workforce of various ages equipped to meet growing environment and development problems and changes arising from the transition to a sustainable society;

(c) To strengthen national capacities, particularly in scientific education and training, to enable Governments, employers and workers to meet their environmental and development objectives and to facilitate the transfer and assimilation of new environmentally sound, socially acceptable and appropriate technology and know-how;

(d) To ensure that environmental and human ecological considerations are integrated at all managerial levels and in all functional management areas, such as marketing, production and finance.

Activities

36.14. Countries with the support of the United Nations system should identify workforce training needs and assess measures to be taken to meet those needs. A review of progress in this area could be undertaken by the United Nations system in 1995.

36.15. National professional associations are encouraged to develop and review their codes of ethics and conduct to strengthen environmental connections and commitment. The training and personal development components of programmes sponsored by professional bodies should ensure incorporation of skills and information on the implementation of sustainable development at all points of policy- and decision-making.

36.16. Countries and educational institutions should integrate environmental and developmental issues into existing training curricula and promote the exchange of their methodologies and evaluations.

36.17. Countries should encourage all sectors of society, such as industry, universities, government officials and employees, non-governmental organizations and community organizations, to include an environmental management component in all relevant training activities, with emphasis on meeting immediate skill requirements through short-term formal and in-plant vocational and management training. Environmental management training capacities should be strengthened, and specialized "training of trainers" programmes should be established to support training at the national and enterprise levels. New training approaches for existing environmentally sound practices should be developed that create employment opportunities and make maximum use of local resource-based methods.

36.18. Countries should strengthen or establish practical training programmes for graduates from vocational schools, high schools and universities, in all countries, to enable them to meet labour market requirements and to achieve sustainable livelihoods. Training and retraining programmes should be established to meet structural adjustments which have an impact on employment and skill qualifications.

36.19. Governments are encouraged to consult with people in isolated situations, whether geographically, culturally or socially, to ascertain their needs for training to enable them to contribute more fully to developing sustainable work practices and lifestyles.

36.20. Governments, industry, trade unions, and consumers should promote an understanding of the interrelationship between good environment and good business practices.

36.21. Countries should develop a service of locally trained and recruited environmental technicians able to provide local people and communities, particularly in deprived urban and rural areas, with the services they require, starting from primary environmental care.

36.22. Countries should enhance the ability to gain access to, analyse and effectively use information and knowledge available on environment and development. Existing or established special training programmes should be strengthened to support information needs of special groups. The impact of these programmes on productivity, health, safety and employment should be evaluated. National and regional environmental labour-market information systems should be developed that would supply, on a continuing basis, data on environmental job and training opportunities. Environment and development training resource-guides should be prepared and updated, with information on training programmes, curricula, methodologies and evaluation results at the local, national, regional and international levels.

36.23. Aid agencies should strengthen the training component in all development projects, emphasizing a multidisciplinary approach, promoting awareness and providing the necessary skills for transition to a sustainable society. The environmental management guidelines of UNDP for operational activities of the United Nations system may contribute to this end.

36.24. Existing networks of employers' and workers' organizations, industry associations and non-governmental organizations should facilitate the exchange of experience concerning training and awareness programmes.

36.25. Governments, in cooperation with relevant international organizations, should develop and implement strategies to deal with national, regional and local environmental threats and emergencies, emphasizing urgent practical training and awareness programmes for increasing public preparedness.

36.26. The United Nations system, as appropriate, should extend its training programmes, particularly its environmental training and support activities for employers' and workers' organizations.

Means of implementation

Financing and cost evaluation

36.27. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $5 billion, including about $2 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

Notes

1/ *Intergovernmental Conference on Environmental Education: Final Report* (Paris, UNESCO, 1978), chap. III.

2/ *Final Report of the World Conference on Education for All: Meeting Basic Learning Needs, Jomtien, Thailand, 5-9 March 1990* (New York, Inter-Agency Commission (UNDP, UNESCO, UNICEF, World Bank) for the World Conference on Education for All, 1990).

Chapter 37

NATIONAL MECHANISMS AND INTERNATIONAL COOPERATION FOR CAPACITY-BUILDING IN DEVELOPING COUNTRIES

PROGRAMME AREA

Basis for action

37.1. The ability of a country to follow sustainable development paths is determined to a large extent by the capacity of its people and its institutions as well as by its ecological and geographical conditions. Specifically, capacity-building encompasses the country's human, scientific, technological, organizational, institutional and resource capabilities. A fundamental goal of capacity-building is to enhance the ability to evaluate and address the crucial questions related to policy choices and modes of implementation among development options, based on an understanding of environmental potentials and limits and of needs as perceived by the people of the country concerned. As a result, the need to strengthen national capacities is shared by all countries.

37.2. Building endogenous capacity to implement Agenda 21 will require the efforts of the countries themselves in partnership with relevant United Nations organizations, as well as with developed countries. The international community at the national, subregional and regional levels, municipalities, non-governmental organizations, universities and research centres, and business and other private institutions and organizations could also assist in these efforts. It is essential for individual countries to identify priorities and determine the means for building the capacity and capability to implement Agenda 21, taking into account their environmental and economic needs. Skills, knowledge and technical know-how at the individual and institutional levels are necessary for institution-building, policy analysis and development management, including the assessment of alternative courses of action with a view to enhancing access to and tranfer of technology and promoting economic development. Technical cooperation, including that related to technology transfer and know-how, encompasses the whole range of activities to develop or strengthen individual and group capacities and capabilities. It should serve the purpose of long-term capacity-building and needs to be managed and coordinated by the countries themselves. Technical cooperation, including that related to technology transfer and know-how, is effective only when it is derived from and related to a country's own strategies and priorities on environment and development and when development agencies and Governments define improved and consistent policies and procedures to support this process.

Objectives

37.3. The overall objectives of endogenous capacity-building in this programme area are to develop and improve national and related subregional and regional capacities and capabilities for sustainable development, with the involvement of the non-governmental sectors. The programme should assist by:

(a) Promoting an ongoing participatory process to define country needs and priorities in promoting Agenda 21 and to give importance to technical and professional human resource development and development of institutional capacities and capabilities on the agenda of countries, with due recognition of the potential for optimum use of existing human resources as well as enhancement of the efficiency of existing institutions and non-governmental organizations, including scientific and technological institutions;

(b) Reorienting technical cooperation and, in that process, setting new priorities in the field, including that related to transfer of technology and know-how processes, while giving due attention to the specific conditions and individual needs of recipients, and improving coordination among providers of assistance for support to countries' own programmes of action. This coordination should also include non-governmental organizations and scientific and technological institutions, as well as business and industry whenever appropriate;

(c) Shifting time horizons in programme planning and implementation for the development and strengthening of institutional structures to permit an enhancement of their ability to respond to new longer-term challenges rather than concentrating only on immediate problems;

(d) Improving and reorienting existing international multilateral institutions with responsibilities for environment and/or development matters to ensure that those institutions have the capability and capacity to integrate environment and development;

(e) Improving institutional capacity and capability, both public and private, in order to evaluate the environmental impact of all development projects.

37.4. Specific objectives include the following:

(a) Each country should aim to complete, as soon as practicable, if possible by 1994, a review of capacity- and capability-building requirements for devising national sustainable development strategies, including those for generating and implementing its own Agenda 21 action programme;

(b) By 1997, the Secretary-General should submit to the General Assembly a report on the achievement of improved policies, coordination systems and procedures for strengthening the implementation of technical cooperation programmes for sustainable development, as well as on additional measures required to strengthen such cooperation. That report should be prepared on the basis of information provided by countries, international organizations, environment and development institutions, donor agencies and non-governmental partners.

Activities

(a) Building a national consensus and formulating capacity-building strategies for implementing Agenda 21

37.5. As an important aspect of overall planning, each country should seek internal consensus at all levels of society on policies and programmes needed for short- and long-term capacity-building to implement its Agenda 21 programme. This consensus should result from a participatory dialogue of relevant interest groups and lead to an identification of skill gaps, institutional capacities and capabilities, technological and scientific requirements and resource needs to enhance environmental knowledge and administration to integrate environment and development. UNDP in partnership with relevant specialized agencies and other international intergovernmental and non-governmental organizations could assist, upon request of Governments, in the identification of the requirements for technical cooperation, including those related to technology transfer and know-how and development assistance for the implementation of Agenda 21. The national planning process together, where appropriate, with national sustainable development action plans or strategies should provide the framework for such cooperation and assistance. UNDP should use and further improve its network of field offices and its broad mandate to provide assistance, using its experience in the field of technical cooperation for facilitating capacity-building at the country and regional levels and making full use of the expertise of other bodies, in particular UNEP, the World Bank and regional commissions and development banks, as well as relevant international intergovernmental and non-governmental organizations.

(b) Identification of national sources and presentation of requests for technical cooperation, including that related to technology transfer and know-how in the framework of sector strategies

37.6. Countries desiring arrangements for technical cooperation, including that related to transfer of technology and know-how, with international organizations and donor institutions should formulate requests in the framework of long-term sector or subsector capacity-building strategies. Strategies should, as appropriate, address policy adjustments to be implemented, budgetary issues, cooperation and coordination among institutions, human resource requirements, and technology and scientific equipment requirements. They should cover public and private sector needs and consider strengthening scientific training and educational and research programmes, including such training in the developed countries and the strengthening of centres of excellence in developing countries. Countries could designate and strengthen a central unit to organize and coordinate technical cooperation, linking it with the priority-setting and the resource allocation process.

(c) Establishment of a review mechanism of technical cooperation in and related to technology transfer and know-how

37.7. Donors and recipients, the organizations and institutions of the United Nations system, and international public and private organizations should review the development of the cooperation process as it relates to technical cooperation, including that related to activities for the transfer of technology and know-how linked to sustainable development. To facilitate this process the Secretary-General could undertake, taking into account work carried out by UNDP and other organizations in preparation for the United Nations Conference on Environment and Development, consultations with developing countries, regional organizations, organizations and institutions of the United Nations system, including regional commissions, and multilateral and bilateral aid and environment agencies, with a view to further strengthening the endogenous capacities of countries and improving technical cooperation, including that related to the technology transfer and know-how process. The following aspects should be reviewed:

(a) Evaluation of existing capacity and capability for the integrated management of environment and development, including technical, technological and institutional capacities and capabilities, and facilities to assess the environmental impact of development projects; and evaluation of abilities to respond to and link up with needs for technical cooperation, including that related to technology transfer and know-how, of Agenda 21 and the global conventions on climate change and biological diversity;

(b) Assessment of the contribution of existing activities in technical cooperation, including that related to transfer of technology and know-how, towards strengthening and building national capacity and capability for integrated environment and development management and an assessment of the means of improving the quality of international technical cooperation, including that related to transfer of technolgy and know-how;

(c) A strategy for shifting to a capacity- and capability-building thrust that recognizes the need for the operational integration of environment and development with longer-term commitments, having as a basis the set of national programmes established by each country, through a participatory process;

(d) Consideration of greater use of long-term cooperative arrangements between municipalities, non-governmental organizations, universities, training and research centres and business, public and private institutions with counterparts in other countries or within countries or regions. Programmes such as the Sustainable Development Networks of UNDP should be assessed in this regard;

(e) Strengthening of the sustainability of projects by including in the original project design consideration of environmental impacts, the costs of institution-building, human resource development and technology needs, as well as financial and organizational requirements for operation and maintenance;

(f) Improvement of technical cooperation, including that related to transfer of technology and know-how and management processes, by giving greater attention to capacity- and capability-building as an integral part of sustainable development strategies for environment and development programmes both in country-related coordination processes, such as consultative groups and round tables, and in sectoral coordination mechanisms to enable developing countries to participate actively in obtaining assistance from different sources.

(d) Enhancement of the expertise and collective contribution of the United Nations system for capacity- and capability-building initiatives

37.8. Organizations, organs, bodies and institutions of the United Nations system, together with other international and regional organizations and the public and private sectors, could, as appropriate, strengthen their joint activities in technical cooperation, including that related to transfer of technology and know-how, in order to address linked environment and development issues and to promote coherence and consistency of action. Organizations could assist and reinforce countries, particularly least developed countries, upon request, on matters relating to national environmental and developmental policies, human resource development and fielding of experts, legislation, natural resources and environmental data.

37.9. UNDP, the World Bank and regional multilateral development banks, as part of their participation in national and regional coordination mechanisms, should assist in facilitating capacity- and capability-building at the country level, drawing upon the special expertise and operational capacity of UNEP in the environmental field as well as of the specialized agencies, organizations of the United Nations system and regional and subregional organizations in their respective areas of competence. For this purpose UNDP should mobilize funding for capacity- and capability-building, utilizing its network of field offices and its broad mandate and experience in the field of technical cooperation, including that related to transfer of technology and know-how. UNDP, together with these international organizations, should at the same time continue to develop consultative processes to enhance the mobilization and coordination of funds from the international community for capacity- and capability-building, including the establishment of an appropriate database. These responsibilities may need to be accompanied by strengthening of the capacities of UNDP.

37.10. The national entity in charge of technical cooperation, with the assistance of the UNDP resident representatives and the UNEP representatives, should establish a small group of key actors to steer the process, giving priority to the country's own strategies and priorities. The experience gained through existing planning exercises such as the national reports for the United Nations Conference on Environment and Development, national conservation strategies and environment action plans should be fully used and incorporated into a country-driven, participatory and sustainable development strategy. This should be complemented with information networks and consultations with donor organizations in order to improve coordination, as well as access to the existing body of scientific and technical knowledge and information available in institutions elsewhere.

(e) Harmonization of the delivery of assistance at the regional level

37.11. At the regional level, existing organizations should consider the desirability of improved regional and subregional consultative processes and round-table meetings to facilitate the exchange of data, information and experience in the implementation of Agenda 21. UNDP, building on the results of the regional surveys on capacity-building that those regional organizations carried out on the United Nations Conference on Environment and Development initiative, and in collaboration with existing regional, subregional or national organizations with potential for regional coordination, should provide a significant input for this purpose. The relevant national unit should establish a steering mechanism. A periodic review mechanism should be established among the countries of the region with the assistance of the appropriate relevant regional organizations and the participation of development banks, bilateral aid agencies and non-governmental organizations. Other possibilities are to develop national and regional research and training facilities building on existing regional and subregional institutions.

Means of implementation

Financing and cost evaluation

37.12. The cost of bilateral expenditures to developing countries for technical cooperation, including that related to transfer of technology and know-how, is about $15 billion or about 25 per cent of total official development assistance. The implementation of Agenda 21 will require a more effective use of these funds and additional funding in key areas.

37.13. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this chapter to be between $300 million and $1 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

Chapter 38

INTERNATIONAL INSTITUTIONAL ARRANGEMENTS

BASIS FOR ACTION

38.1. The mandate of the United Nations Conference on Environment and Development emanates from General Assembly resolution 44/228, in which the Assembly, *inter alia*, affirmed that the Conference should elaborate strategies and measures to halt and reverse the effects of environmental degradation in the context of increased national and international efforts to promote sustainable and environmentally sound development in all countries and that the promotion of economic growth in developing countries is essential to address problems of environmental degradation. The intergovernmental follow-up to the Conference process shall be within the framework of the United Nations system, with the General Assembly being the supreme policy-making forum that would provide overall guidance to Governments, the United Nations system and relevant treaty bodies. At the same time, Governments, as well as regional economic and technical cooperation organizations, have a responsibility to play an important role in the follow-up to the Conference. Their commitments and actions should be adequately supported by the United Nations system and multilateral financial institutions. Thus, national and international efforts would mutually benefit from one another.

38.2. In fulfilling the mandate of the Conference, there is a need for institutional arrangements within the United Nations system in conformity with, and providing input into, the restructuring and revitalization of the United Nations in the economic, social and related fields, and the overall reform of the United Nations, including ongoing changes in the Secretariat. In the spirit of reform and revitalization of the United Nations system, implementation of Agenda 21 and other conclusions of the Conference shall be based on an action- and result-oriented approach and consistent with the principles of universality, democracy, transparency, cost-effectiveness and accountability.

38.3. The United Nations system, with its multisectoral capacity and the extensive experience of a number of specialized agencies in various spheres of international cooperation in the field of environment and development, is uniquely positioned to assist Governments to establish more effective patterns of economic and social development with a view to achieving the objectives of Agenda 21 and sustainable development.

38.4. All agencies of the United Nations system have a key role to play in the implementation of Agenda 21 within their respective competence. To ensure proper coordination and avoid duplication in the implementation of Agenda 21, there should be an effective division of labour between various parts of the United Nations system based on their terms of reference and comparative advantages. Member States, through relevant governing bodies, are in a position to ensure that these tasks are carried out properly. In order to facilitate evaluation of agencies' performance and promote knowledge of their activities, all bodies of the United Nations system should be required to elaborate and publish reports of their activities concerning the implementation of Agenda 21 on a regular basis. Serious and continuous reviews of their policies, programmes, budgets and activities will also be required.

38.5. The continued active and effective participation of non-governmental organizations, the scientific community and the private sector, as well as local groups and communities, are important in the implementation of Agenda 21.

38.6. The institutional structure envisaged below will be based on agreement on financial resources and mechanisms, technology transfer, the Rio Declaration and Agenda 21. In addition, there has to be an effective link between substantive action and financial support, and this requires close and effective cooperation and exchange of information between the United Nations system and the multilateral financial institutions for the follow-up of Agenda 21 within the institutional arrangement.

OBJECTIVES

38.7. The overall objective is the integration of environment and development issues at national, subregional, regional and international levels, including in the United Nations system institutional arrangements.

38.8. Specific objectives shall be:

(a) To ensure and review the implementation of Agenda 21 so as to achieve sustainable development in all countries;

(b) To enhance the role and functioning of the United Nations system in the field of environment and development. All relevant agencies, organizations and programmes of the United Nations system should adopt concrete programmes for the implementation of Agenda 21 and also provide policy guidance for United Nations activities or advice to Governments, upon request, within their areas of competence;

(c) To strengthen cooperation and coordination on environment and development in the United Nations system;

(d) To encourage interaction and cooperation between the United Nations system and other intergovernmental and non-governmental subregional, regional and global institutions and non-governmental organizations in the field of environment and development;

(e) To strengthen institutional capabilities and arrangements required for the effective implementation, follow-up and review of Agenda 21;

(f) To assist in the strengthening and coordination of national, subregional and regional capacities and actions in the areas of environment and development;

(g) To establish effective cooperation and exchange of information between United Nations organs, organizations, programmes and the multilateral financial bodies, within the institutional arrangements for the follow-up of Agenda 21;

(h) To respond to continuing and emerging issues relating to environment and development;

(i) To ensure that any new institutional arrangements would support revitalization, clear division of responsibilities and the avoidance of duplication in the United Nations system and depend to the maximum extent possible upon existing resources.

INSTITUTIONAL STRUCTURE

A. General Assembly

38.9. The General Assembly, as the highest intergovernmental mechanism, is the principal policy-making and appraisal organ on matters relating to the follow-up of the Conference. The Assembly would organize a regular review of the implementation of Agenda 21. In fulfilling this task, the Assembly could consider the timing, format and organizational aspects of such a review. In particular, the Assembly could consider holding a special session not later than 1997 for the overall review and appraisal of Agenda 21, with adequate preparations at a high level.

B. Economic and Social Council

38.10. The Economic and Social Council, in the context of its role under the Charter *vis-à-vis* the General Assembly and the ongoing restructuring and revitalization of the United Nations in the economic, social and related fields, would assist the General Assembly by overseeing system-wide coordination in the implementation of Agenda 21 and making recommendations in this regard. In addition, the Council would undertake the task of directing system-wide coordination and integration of environmental and developmental aspects of United Nations policies and programmes and would make appropriate recommendations to the General Assembly, specialized agencies concerned and Member States. Appropriate steps should be taken to obtain regular reports from specialized agencies on their plans and programmes related to the implementation of Agenda 21, pursuant to Article 64 of the Charter of the United Nations. The Economic and Social Council should organize a periodic review of the work of the Commission on Sustainable Development envisaged in paragraph 38.11, as well as of system-wide activities to integrate environment and development, making full use of its high-level and coordination segments.

C. Commission on Sustainable Development

38.11. In order to ensure the effective follow-up of the Conference, as well as to enhance international cooperation and rationalize the intergovernmental decision-making capacity for the integration of environment and development issues and to examine the progress in the implementation of Agenda 21 at the national, regional and international levels, a high-level Commission on Sustainable Development should be established in accordance with Article 68 of the Charter of the United Nations. This Commission would report to the Economic and Social Council in the context of the Council's role under the Charter vis-à-vis the General Assembly. It would consist of representatives of States elected as members with due regard to equitable geographical distribution. Representatives of non-member States of the Commission would have observer status. The Commission should provide for the active involvement of organs, programmes and organizations of the United Nations system, international financial institutions and other relevant intergovernmental organizations, and encourage the participation of non-governmental organizations, including industry and the business and scientific communities. The first meeting of the Commission should be convened no later than 1993. The Commission should be supported by the secretariat envisaged in paragraph 38.19. Meanwhile the Secretary-General of the United Nations is requested to ensure adequate interim administrative secretariat arrangements.

38.12. The General Assembly, at its forty-seventh session, should determine specific organizational modalities for the work of this Commission, such as its membership, its relationship with other intergovernmental United Nations bodies dealing with matters related to environment and development, and the frequency, duration and venue of its meetings. These modalities should take into account the ongoing process of revitalization and restructuring of the work of the United Nations in the economic, social and related fields, in particular measures recommended by the General Assembly in resolutions 45/264 f 13 May 1991 and 46/235 of 13 April 1992 and other relevant Assembly esolutions. In this respect, the Secretary-General of the United Nations, ith the assistance of the Secretary-General of the United Nations Conference n Environment and Development, is requested to prepare for the Assembly a eport with appropriate recommendations and proposals.

8.13. The Commission on Sustainable Development should have the following unctions:

(a) To monitor progress in the implementation of Agenda 21 and ctivities related to the integration of environmental and developmental goals throughout the United Nations system through analysis and evaluation of eports from all relevant organs, organizations, programmes and institutions f the United Nations system dealing with various issues of environment and evelopment, including those related to finance;

(b) To consider information provided by Governments, including, for xample, information in the form of periodic communications or national reports regarding the activities they undertake to implement Agenda 21, the problems they face, such as problems related to financial resources and technology transfer, and other environment and development issues they find relevant;

(c) To review the progress in the implementation of the commitments contained in Agenda 21, including those related to provision of financial resources and transfer of technology;

(d) To receive and analyse relevant input from competent non-governmental organizations, including the scientific and private sectors, in the context of the overall implementation of Agenda 21;

(e) To enhance the dialogue, within the framework of the United Nations, with non-governmental organizations and the independent sector, as well as other entities outside the United Nations system;

(f) To consider, where appropriate, information regarding the progress made in the implementation of environmental conventions, which could be made available by the relevant Conferences of Parties;

(g) To provide appropriate recommendations to the General Assembly through the Economic and Social Council on the basis of an integrated consideration of the reports and issues related to the implementation of Agenda 21;

(h) To consider, at an appropriate time, the results of the review to be conducted expeditiously by the Secretary-General of all recommendations of the Conference for capacity-building programmes, information networks, task forces and other mechanisms to support the integration of environment and development at regional and subregional levels.

38.14. Within the intergovernmental framework, consideration should be given to allowing non-governmental organizations, including those related to major groups, particularly women's groups, committed to the implementation of Agenda 21 to have relevant information available to them, including information, reports and other data produced within the United Nations system.

D. The Secretary-General

38.15. Strong and effective leadership on the part of the Secretary-General is crucial, since he/she would be the focal point of the institutional arrangements within the United Nations system for the successful follow-up to the Conference and for the implementation of Agenda 21.

E. High-level inter-agency coordination mechanism

38.16. Agenda 21, as the basis for action by the international community to integrate environment and development, should provide the principal framework for coordination of relevant activities within the United Nations system. To ensure effective monitoring, coordination and supervision of the involvement of the United Nations system in the follow-up to the Conference, there is a need for a coordination mechanism under the direct leadership of the Secretary-General.

38.17. This task should be given to the Administrative Committee on Coordination (ACC), headed by the Secretary-General. ACC would thus provide a vital link and interface between the multilateral financial institutions and other United Nations bodies at the highest administrative level. The Secretary-General should continue to revitalize the functioning of the Committee. All heads of agencies and institutions of the United Nations system shall be expected to cooperate with the Secretary-General fully in order to make ACC work effectively in fulfilling its crucial role and ensure successful implementation of Agenda 21. ACC should consider establishing a special task force, subcommittee or sustainable development board, taking into account the experience of the Designated Officials for Environmental Matters (DOEM) and the Committee of International Development Institutions on Environment (CIDIE), as well as the respective roles of UNEP and UNDP. Its report should be submitted to the relevant intergovernmental bodies.

F. High-level advisory body

38.18. Intergovernmental bodies, the Secretary-General and the United Nations system as a whole may also benefit from the expertise of a high-level advisory board consisting of eminent persons knowledgeable about environment and development, including relevant sciences, appointed by the Secretary-General in their personal capacity. In this regard, the Secretary-General should make appropriate recommendations to the General Assembly at its forty-seventh session.

G. Secretariat support structure

38.19. A highly qualified and competent secretariat support structure within the United Nations Secretariat, drawing, *inter alia*, on the expertise gained in the Conference preparatory process is essential for the follow-up to the Conference and the implementation of Agenda 21. This secretariat support structure should provide support to the work of both intergovernmental and inter-agency coordination mechanisms. Concrete organizational decisions fall within the competence of the Secretary-General as the chief administrative officer of the Organization, who is requested to report on the provisions to be made, covering staffing implications, as soon as practicable, taking into account gender balance as defined in Article 8 of the Charter of the United Nations and the need for the best use of existing resources in the context of the current and ongoing restructuring of the United Nations Secretariat.

H. Organs, programmes and organizations of the United Nations system

38.20. In the follow-up to the Conference, in particular the implementation of Agenda 21, all relevant organs, programmes and organizations of the United Nations system will have an important role within their respective areas of expertise and mandates in supporting and supplementing national efforts. Coordination and mutual complementarity of their efforts to promote integration of environment and development can be enhanced by encouraging countries to maintain consistent positions in the various governing bodies.

1. United Nations Environment Programme

38.21. In the follow-up to the Conference, there will be a need for an enhanced and strengthened role for UNEP and its Governing Council. The Governing Council should, within its mandate, continue to play its role with regard to policy guidance and coordination in the field of the environment, taking into account the development perspective.

38.22. Priority areas on which UNEP should concentrate include the following:

(a) Strengthening its catalytic role in stimulating and promoting environmental activities and considerations throughout the United Nations system;

(b) Promoting international cooperation in the field of environment and recommending, as appropriate, policies to this end;

(c) Developing and promoting the use of such techniques as natural resource accounting and environmental economics;

(d) Environmental monitoring and assessment, both through improved participation by the United Nations system agencies in the Earthwatch programme and expanded relations with private scientific and non-governmental research institutes; strengthening and making operational its early-warning function;

(e) Coordination and promotion of relevant scientific research with a view to providing a consolidated basis for decision-making;

(f) Dissemination of environmental information and data to Governments and to organs, programmes and organizations of the United Nations system;

(g) Raising general awareness and action in the area of environmental protection through collaboration with the general public, non-governmental entities and intergovernmental institutions;

(h) Further development of international environmental law, in particular conventions and guidelines, promotion of its implementation, and coordinating functions arising from an increasing number of international legal agreements, inter alia, the functioning of the secretariats of the Conventions, taking into account the need for the most efficient use of resources, including possible co-location of secretariats established in the future;

(i) Further development and promotion of the widest possible use of environmental impact assessments, including activities carried out under the auspices of specialized agencies of the United Nations system, and in connection with every significant economic development project or activity;

(j) Facilitation of information exchange on environmentally sound technologies, including legal aspects, and provision of training;

(k) Promotion of subregional and regional cooperation and support to relevant initiatives and programmes for environmental protection, including playing a major contributing and coordinating role in the regional mechanisms in the field of environment identified for the follow-up to the Conference;

(l) Provision of technical, legal and institutional advice to Governments, upon request, in establishing and enhancing their national legal and institutional frameworks, in particular, in cooperation with UNDP capacity-building efforts;

(m) Support to Governments, upon request, and development agencies and organs in the integration of environmental aspects into their development policies and programmes, in particular through provision of environmental, technical and policy advice during programme formulation and implementation;

(n) Further developing assessment and assistance in cases of environmental emergencies.

38.23. In order to perform all of these functions, while retaining its role as the principal body within the United Nations system in the field of environment and taking into account the development aspects of environmental questions, UNEP would require access to greater expertise and provision of adequate financial resources and it would require closer cooperation and collaboration with development organs and other relevant organs of the United Nations system. Furthermore, the regional offices of UNEP should be strengthened without weakening its headquarters in Nairobi, and UNEP should take steps to reinforce and intensify its liaison and interaction with UNDP and the World Bank.

2. United Nations Development Programme

38.24. UNDP, like UNEP, also has a crucial role in the follow-up to the United Nations Conference on Environment and Development. Through its network of field offices it would foster the United Nations system's collective thrust in support of the implementation of Agenda 21, at the country, regional, interregional and global levels, drawing on the expertise of the specialized agencies and other United Nations organizations and bodies involved in operational activities. The role of the resident representative/resident coordinator of UNDP needs to be strengthened in order to coordinate the field-level activities of the United Nations operational activities.

38.25. Its role should include the following:

(a) Acting as the lead agency in organizing United Nations system efforts towards capacity-building at the local, national and regional levels;

(b) Mobilizing donor resources on behalf of Governments for capacity-building in recipient countries and, where appropriate, through the use of the UNDP donor round-table mechanisms;

(c) Strengthening its own programmes in support of follow-up to the Conference without prejudice to the fifth programming cycle;

(d) Assisting recipient countries, upon request, in the establishment and strengthening of national coordination mechanisms and networks related to activities for the follow-up to the Conference;

(e) Assisting recipient countries, upon request, in coordinating the mobilization of domestic financial resources;

(f) Promoting and strengthening the role and involvement of women, youth and other major groups in recipient countries in the implementation of Agenda 21.

3. United Nations Conference on Trade and Development

38.26. UNCTAD should play an important role in the implementation of Agenda 21 as extended at its eighth session, taking into account the importance of the interrelationships between development, international trade and the environment and in accordance with its mandate in the area of sustainable development.

4. United Nations Sudano-Sahelian Office

38.27. The role of the United Nations Sudano-Sahelian Office (UNSO), with added resources that may become available, operating under the umbrella of UNDP and with the support of UNEP, should be strengthened so that it can assume an appropriate major advisory role and participate effectively in the implementation of Agenda 21 provisions related to combating drought and desertification and to land resource management. In this context, the experience gained could be used by all other countries affected by drought and desertification, in particular those in Africa, with special attention to countries most affected or classified as least developed countries.

5. Specialized agencies of the United Nations system and related organizations and other relevant intergovernmental organizations

38.28. All specialized agencies of the United Nations system, related organizations and other relevant intergovernmental organizations within their respective fields of competence have an important role to play in the implementation of relevant parts of Agenda 21 and other decisions of the Conference. Their governing bodies may consider ways of strengthening and adjusting activities and programmes in line with Agenda 21, in particular, regarding projects for promoting sustainable development. Furthermore, they may consider establishing special arrangements with donors and financial institutions for project implementation that may require additional resources.

I. Regional and subregional cooperation and implementation

38.29. Regional and subregional cooperation will be an important part of the outcome of the Conference. The regional commissions, regional development banks and regional economic and technical cooperation organizations, within their respective agreed mandates, can contribute to this process by:

(a) Promoting regional and subregional capacity-building;

(b) Promoting the integration of environmental concerns in regional and subregional development policies;

(c) Promoting regional and subregional cooperation, where appropriate, regarding transboundary issues related to sustainable development.

38.30. The regional commissions, as appropriate, should play a leading role in coordinating regional and subregional activities by sectoral and other United Nations bodies and shall assist countries in achieving sustainable development. The commissions and regional programmes within the United Nations system, as well as other regional organizations, should review the need for modification of ongoing activities, as appropriate, in light of Agenda 21.

38.31. There must be active cooperation and collaboration among the regional commissions and other relevant organizations, regional development banks, non-governmental organizations and other institutions at the regional level. UNEP and UNDP, together with the regional commissions, would have a crucial role to play, especially in providing the necessary assistance, with particular emphasis on building and strengthening the national capacity of Member States.

38.32. There is a need for closer cooperation between UNEP and UNDP, together with other relevant institutions, in the implementation of projects to halt environmental degradation or its impact and to support training programmes in environmental planning and management for sustainable development at the regional level.

38.33. Regional intergovernmental technical and economic organizations have an important role to play in helping Governments to take coordinated action in solving environment issues of regional significance.

38.34. Regional and subregional organizations should play a major role in the implementation of the provisions of Agenda 21 related to combating drought and desertification. UNEP, UNDP and UNSO should assist and cooperate with those relevant organizations.

38.35. Cooperation between regional and subregional organizations and relevant organizations of the United Nations system should be encouraged, where appropriate, in other sectoral areas.

J. National implementation

38.36. States have an important role to play in the follow-up of the Conference and the implementation of Agenda 21. National level efforts should be undertaken by all countries in an integrated manner so that both environment and development concerns can be dealt with in a coherent manner.

38.37. Policy decisions and activities at the national level, tailored to support and implement Agenda 21, should be supported by the United Nations system upon request.

38.38. Furthermore, States could consider the preparation of national reports. In this context, the organs of the United Nations system should, upon request, assist countries, in particular developing countries. Countries could also consider the preparation of national action plans for the implementation of Agenda 21.

38.39. Existing assistance consortia, consultative groups and round tables should make greater efforts to integrate environmental considerations and related development objectives into their development assistance strategies and should consider reorienting and appropriately adjusting their memberships and operations to facilitate this process and better support national efforts to integrate environment and development.

38.40. States may wish to consider setting up a national coordination structure responsible for the follow-up of Agenda 21. Within this structure, which would benefit from the expertise of non-governmental organizations, submissions and other relevant information could be made to the United Nations.

K. Cooperation between United Nations bodies and international financial organizations

38.41. The success of the follow-up to the Conference is dependent upon an effective link between substantive action and financial support, and this requires close and effective cooperation between United Nations bodies and the multilateral financial organizations. The Secretary-General and heads of United Nations programmes, organizations and the multilateral financial organizations have a special responsibility in forging such cooperation, not only through the United Nations high-level coordination mechanism (Administrative Committee on Coordination) but also at regional and national levels. In particular, representatives of multilateral financial institutions and mechanisms, as well as IFAD, should actively be associated with deliberations of the intergovernmental structure responsible for the follow-up to Agenda 21.

L. Non-governmental organizations

38.42. Non-governmental organizations and major groups are important partners in the implementation of Agenda 21. Relevant non-governmental organizations, including the scientific community, the private sector and women's groups, should be given opportunities to make their contributions and establish appropriate relationships with the United Nations system. Support should be provided for developing countries' non-governmental organizations and their self-organized networks.

38.43. The United Nations system, including international finance and development agencies, and all intergovernmental organizations and forums should, in consultation with non-governmental organizations, take measures to:

(a) Design open and effective means to achieve the participation of non-governmental organizations, including those related to major groups, in the process established to review and evaluate the implementation of Agenda 21 at all levels and promote their contribution to it;

(b) Take into account the findings of review systems and evaluation processes of non-governmental organizations in relevant reports of the Secretary-General to the General Assembly and all pertinent United Nations agencies and intergovernmental organizations and forums concerning implementation of Agenda 21 in accordance with the review process.

38.44. Procedures should be established for an expanded role for non-governmental organizations, including those related to major groups, with accreditation based on the procedures used for the Conference. Such organizations should have access to reports and other information produced by the United Nations system. The General Assembly, at an early stage, should examine ways of enhancing the involvement of non-governmental organizations within the United Nations system in relation to the follow-up process of the Conference.

38.45. The Conference takes note of other institutional initiatives for the implementation of Agenda 21, such as the proposal to establish a non-governmental Earth Council and the proposal to appoint a guardian for future generations, as well as other initiatives taken by local governments and business sectors.

Chapter 39

INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS

Basis for action

39.1. The recognition that the following vital aspects of the universal, multilateral and bilateral treaty-making process should be taken into account:

(a) The further development of international law on sustainable development, giving special attention to the delicate balance between environmental and developmental concerns;

(b) The need to clarify and strengthen the relationship between existing international instruments or agreements in the field of environment and relevant social and economic agreements or instruments, taking into account the special needs of developing countries;

(c) At the global level, the essential importance of the participation in and the contribution of all countries, including the developing countries, to treaty making in the field of international law on sustainable development. Many of the existing international legal instruments and agreements in the field of environment have been developed without adequate participation and contribution of developing countries, and thus may require review in order to reflect the concerns and interests of developing countries and to ensure a balanced governance of such instruments and agreements;

(d) Developing countries should also be provided with technical assistance in their attempts to enhance their national legislative capabilities in the field of environmental law;

(e) Future projects for the progressive development and codification of international law on sustainable development should take into account the ongoing work of the International Law Commission;

(f) Any negotiations for the progressive development and codification of international law concerning sustainable development should, in general, be conducted on a universal basis, taking into account special circumstances in the various regions.

Objectives

39.2. The overall objective of the review and development of international environmental law should be to evaluate and to promote the efficacy of that law and to promote the integration of environment and development policies through effective international agreements or instruments taking into account both universal principles and the particular and differentiated needs and concerns of all countries.

39.3. Specific objectives are:

(a) To identify and address difficulties which prevent some States, in particular developing countries, from participating in or duly implementing international agreements or instruments and, where appropriate, to review and revise them with the purposes of integrating environmental and developmental concerns and laying down a sound basis for the implementation of these agreements or instruments;

(b) To set priorities for future law-making on sustainable development at the global, regional or subregional level, with a view to enhancing the efficacy of international law in this field through, in particular, the integration of environmental and developmental concerns;

(c) To promote and support the effective participation of all countries concerned, in particular developing countries, in the negotiation, implementation, review and governance of international agreements or instruments, including appropriate provision of technical and financial assistance and other available mechanisms for this purpose, as well as the use of differential obligations where appropriate;

(d) To promote, through the gradual development of universally and multilaterally negotiated agreements or instruments, international standards for the protection of the environment that take into account the different situations and capabilities of countries. States recognize that environmental policies should deal with the root causes of environmental degradation, thus preventing environmental measures from resulting in unnecessary restrictions to trade. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing international environmental problems should, as far as possible, be based on an international consensus. Domestic measures targeted to achieve certain environmental objectives may need trade measures to render them effective. Should trade policy measures be found necessary for the enforcement of environmental policies, certain principles and rules should apply. These could include, inter alia, the principle of non-discrimination; the principle that the trade measure chosen should be the least trade-restrictive necessary to achieve the objectives; an obligation to ensure transparency in the use of trade measures related to the environment and to provide adequate notification of national regulations; and the need to give consideration to the special conditions and development requirements of developing countries as they move towards internationally agreed environmental objectives;

(e) To ensure the effective, full and prompt implementation of legally binding instruments and to facilitate timely review and adjustment of agreements or instruments by the parties concerned, taking into account the special needs and concerns of all countries, in particular developing countries;

(f) To improve the effectiveness of institutions, mechanisms and ocedures for the administration of agreements and instruments;

(g) To identify and prevent actual or potential conflicts, particularly tween environmental and social/economic agreements or instruments, with a ew to ensuring that such agreements or instruments are consistent. Where nflicts arise they should be appropriately resolved;

(h) To study and consider the broadening and strengthening of the pacity of mechanisms, inter alia, in the United Nations system, to cilitate, where appropriate and agreed to by the parties concerned, the entification, avoidance and settlement of international disputes in the eld of sustainable development, duly taking into account existing bilateral d multilateral agreements for the settlement of such disputes.

tivities

.4. Activities and means of implementation should be considered in the ght of the above basis for action and objectives, without prejudice to the ght of every State to put forward suggestions in this regard in the General sembly. These suggestions could be reproduced in a separate compilation on stainable development.

A. Review, assessment and fields of action in international law for sustainable development

.5. While ensuring the effective participation of all countries concerned, rties should at periodic intervals review and assess both the past rformance and effectiveness of existing international agreements or struments as well as the priorities for future law making on sustainable velopment. This may include an examination of the feasibility of aborating general rights and obligations of States, as appropriate, in the eld of sustainable development, as provided by General Assembly solution 44/228. In certain cases, attention should be given to the ssibility of taking into account varying circumstances through differential ligations or gradual application. As an option for carrying out this task, rlier UNEP practice may be followed whereby legal experts designated by vernments could meet at suitable intervals, to be decided later, with a oader environmental and developmental perspective.

.6. Measures in accordance with international law should be considered to dress, in times of armed conflict, large-scale destruction of the vironment that cannot be justified under international law. The General sembly and its Sixth Committee are the appropriate forums to deal with this bject. The specific competence and role of the International Committee of e Red Cross should be taken into account.

.7. In view of the vital necessity of ensuring safe and environmentally und nuclear power, and in order to strengthen international cooperation in this field, efforts should be made to conclude the ongoing negotiations for a nuclear safety convention in the framework of the International Atomic Energy Agency.

B. Implementation mechanisms

39.8. The parties to international agreements should consider procedures and mechanisms to promote and review their effective, full and prompt implementation. To that effect, States could, inter alia:

(a) Establish efficient and practical reporting systems on the effective, full and prompt implementation of international legal instruments;

(b) Consider appropriate ways in which relevant international bodies, such as UNEP, might contribute towards the further development of such mechanisms.

C. Effective participation in international law making

39.9. In all these activities and others that may be pursued in the future, based on the above basis for action and objectives, the effective participation of all countries, in particular developing countries, should be ensured through appropriate provision of technical assistance and/or financial assistance. Developing countries should be given "headstart" support not only in their national efforts to implement international agreements or instruments, but also to participate effectively in the negotiation of new or revised agreements or instruments and in the actual international operation of such agreements or instruments. Support should include assistance in building up expertise in international law particularly in relation to sustainable development, and in assuring access to the necessary reference information and scientific/technical expertise.

D. Disputes in the field of sustainable development

39.10. In the area of avoidance and settlement of disputes, States should further study and consider methods to broaden and make more effective the range of techniques available at present, taking into account, among others, relevant experience under existing international agreements, instruments or institutions and, where appropriate, their implementing mechanisms such as modalities for dispute avoidance and settlement. This may include mechanisms and procedures for the exchange of data and information, notification and consultation regarding situations that might lead to disputes with other States in the field of sustainable development and for effective peaceful means of dispute settlement in accordance with the Charter of the United Nations, including, where appropriate, recourse to the International Court of Justice, and their inclusion in treaties relating to sustainable development.

Chapter 40

INFORMATION FOR DECISION-MAKING

INTRODUCTION

40.1. In sustainable development, everyone is a user and provider of information considered in the broad sense. That includes data, information, appropriately packaged experience and knowledge. The need for information arises at all levels, from that of senior decision makers at the national and international levels to the grass-roots and individual levels. The following two programme areas need to be implemented to ensure that decisions are based increasingly on sound information:

(a) Bridging the data gap;

(b) Improving information availability.

PROGRAMME AREAS

A. Bridging the data gap

Basis for action

40.2. While considerable data already exist, as the various sectoral chapters of Agenda 21 indicate, more and different types of data need to be collected, at the local, provincial, national and international levels, indicating the status and trends of the planet's ecosystem, natural resource, pollution and socio-economic variables. The gap in the availability, quality, coherence, standardization and accessibility of data between the developed and the developing world has been increasing, seriously impairing the capacities of countries to make informed decisions concerning environment and development.

40.3. There is a general lack of capacity, particularly in developing countries, and in many areas at the international level, for the collection and assessment of data, for their transformation into useful information and for their dissemination. There is also need for improved coordination among environmental, demographic, social and developmental data and information activities.

40.4. Commonly used indicators such as the gross national product (GNP) and measurements of individual resource or pollution flows do not provide adequate indications of sustainability. Methods for assessing interactions between different sectoral environmental, demographic, social and developmental parameters are not sufficiently developed or applied. Indicators of sustainable development need to be developed to provide solid bases for decision-making at all levels and to contribute to a self-regulating sustainability of integrated environment and development systems.

Objectives

40.5. The following objectives are important:

(a) To achieve more cost-effective and relevant data collection and assessment by better identification of users, in both the public and private sectors, and of their information needs at the local, provincial, national and international levels;

(b) To strengthen local, provincial, national and international capacity to collect and use multisectoral information in decision-making processes and to enhance capacities to collect and analyse data and information for decision-making, particularly in developing countries;

(c) To develop or strengthen local, provincial, national and international means of ensuring that planning for sustainable development in all sectors is based on timely, reliable and usable information;

(d) To make relevant information accessible in the form and at the time required to facilitate its use.

Activities

(a) Development of indicators of sustainable development

40.6. Countries at the national level and international governmental and non-governmental organizations at the international level should develop the concept of indicators of sustainable development in order to identify such indicators. In order to promote the increasing use of some of those indicators in satellite accounts, and eventually in national accounts, the development of indicators needs to be pursued by the Statistical Office of the United Nations Secretariat, as it draws upon evolving experience in this regard.

(b) Promotion of global use of indicators of sustainable development

40.7. Relevant organs and organizations of the United Nations system, in cooperation with other international governmental, intergovernmental and non-governmental organizations, should use a suitable set of sustainable development indicators and indicators related to areas outside of national jurisdiction, such as the high seas, the upper atmosphere and outer space. The organs and organizations of the United Nations system, in coordination with other relevant international organizations, could provide recommendations for harmonized development of indicators at the national, regional and global levels, and for incorporation of a suitable set of these indicators in common, regularly updated, and widely accessible reports and databases, for use at the international level, subject to national sovereignty considerations.

(c) Improvement of data collection and use

40.8. Countries and, upon request, international organizations should carry out inventories of environmental, resource and developmental data, based on national/global priorities for the management of sustainable development. They should determine the gaps and organize activities to fill those gaps. Within the organs and organizations of the United Nations system and relevant international organizations, data-collection activities, including those of Earthwatch and World Weather Watch, need to be strengthened, especially in the areas of urban air, freshwater, land resources (including forests and rangelands), desertification, other habitats, soil degradation, biodiversity, the high seas and the upper atmosphere. Countries and international organizations should make use of new techniques of data collection, including satellite-based remote sensing. In addition to the strengthening of existing development-related data collection, special attention needs to be paid to such areas as demographic factors, urbanization, poverty, health and rights of access to resources, as well as special groups, including women, indigenous peoples, youth, children and the disabled, and their relationships with environment issues.

(d) Improvement of methods of data assessment and analysis

40.9. Relevant international organizations should develop practical recommendations for coordinated, harmonized collection and assessment of data at the national and international levels. National and international data and information centres should set up continuous and accurate data-collection systems and make use of geographic information systems, expert systems, models and a variety of other techniques for the assessment and analysis of data. These steps will be particularly relevant, as large quantities of data from satellite sources will need to be processed in the future. Developed countries and international organizations, as well as the private sector, should cooperate, in particular with developing countries, upon request, to facilitate their acquiring these technologies and this know-how.

(e) Establishment of a comprehensive information framework

40.10. Governments should consider undertaking the necessary institutional changes at the national level to achieve the integration of environmental and developmental information. At the international level, environmental assessment activities need to be strengthened and coordinated with efforts to assess development trends.

(f) Strengthening of the capacity for traditional information

40.11. Countries, with the cooperation of international organizations, should establish supporting mechanisms to provide local communities and resource users with the information and know-how they need to manage their environment and resources sustainably, applying traditional and indigenous knowledge and approaches when appropriate. This is particularly relevant for rural and urban populations and indigenous, women's and youth groups.

Means of implementation

(a) Financing and cost evaluation

40.12. The secretariat of the Conference has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $1.9 billion from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Institutional means

40.13. Institutional capacity to integrate environment and development and to develop relevant indicators is lacking at both the national and international levels. Existing institutions and programmes such as the Global Environmental Monitoring System (GEMS) and the Global Resource Information Database (GRID) within UNEP and different entities within the systemwide Earthwatch will need to be considerably strengthened. Earthwatch has been an essential element for environment-related data. While programmes related to development data exist in a number of agencies, there is insufficient coordination between them. The activities related to development data of agencies and institutions of the United Nations system should be more effectively coordinated, perhaps through an equivalent and complementary "Development Watch", which with the existing Earthwatch should be coordinated through an appropriate office within the United Nations to ensure the full integration of environment and development concerns.

(c) Scientific and technological means

40.14. Regarding transfer of technology, with the rapid evolution of data-collection and information technologies it is necessary to develop guidelines and mechanisms for the rapid and continuous transfer of those technologies, particularly to developing countries, in conformity with chapter 34 (Transfer of environmentally sound technology, cooperation and capacity-building), and for the training of personnel in their utilization.

(d) Human resource development

40.15. International cooperation for training in all areas and at all levels will be required, particularly in developing countries. That training will have to include technical training of those involved in data collection, assessment and transformation, as well as assistance to decision makers concerning how to use such information.

(e) Capacity-building

40.16. All countries, particularly developing countries, with the support of international cooperation, should strengthen their capacity to collect, store, organize, assess and use data in decision-making more effectively.

B. Improving availability of information

Basis for action

40.17. There already exists a wealth of data and information that could be used for the management of sustainable development. Finding the appropriate information at the required time and at the relevant scale of aggregation is a difficult task.

40.18. Information within many countries is not adequately managed, because of shortages of financial resources and trained manpower, lack of awareness of the value and availability of such information and other immediate or pressing problems, especially in developing countries. Even where information is available, it may not be easily accessible, either because of the lack of technology for effective access or because of associated costs, especially for information held outside the country and available commercially.

Objectives

40.19. Existing national and international mechanisms of information processing and exchange, and of related technical assistance, should be strengthened to ensure effective and equitable availability of information generated at the local, provincial, national and international levels, subject to national sovereignty and relevant intellectual property rights.

40.20. National capacities should be strengthened, as should capacities within Governments, non-governmental organizations and the private sector, in information handling and communication, particularly within developing countries.

40.21. Full participation of, in particular, developing countries should be ensured in any international scheme under the organs and organizations of the United Nations system for the collection, analysis and use of data and information.

Activities

(a) Production of information usable for decision-making

40.22. Countries and international organizations should review and strengthen information systems and services in sectors related to sustainable development, at the local, provincial, national and international levels. Special emphasis should be placed on the transformation of existing information into forms more useful for decision-making and on targeting information at different user groups. Mechanisms should be strengthened or established for transforming scientific and socio-economic assessments into information suitable for both planning and public information. Electronic and non-electronic formats should be used.

(b) Establishment of standards and methods for handling information

40.23. Governments should consider supporting the efforts of governmental as well as non-governmental organizations to develop mechanisms for efficient and harmonized exchange of information at the local, national, provincial and international levels, including revision and establishment of data, access and dissemination formats, and communication interfaces.

(c) Development of documentation about information

40.24. The organs and organizations of the United Nations system, as well as other governmental and non-governmental organizations, should document and share information about the sources of available information in their respective organizations. Existing programmes, such as those of the Advisory Committee for the Coordination of Information Systems (ACCIS) and the International Environmental Information System (INFOTERRA), should be reviewed and strengthened as required. Networking and coordinating mechanisms should be encouraged between the wide variety of other actors, including arrangements with non-governmental organizations for information sharing and donor activities for sharing information on sustainable development projects. The private sector should be encouraged to strengthen the mechanisms of sharing its experience and information on sustainable development.

(d) Establishment and strengthening of electronic networking capabilities

40.25. Countries, international organizations, including organs and organizations of the United Nations system, and non-governmental organizations should exploit various initiatives for electronic links to support information sharing, to provide access to databases and other information sources, to facilitate communication for meeting broader objectives, such as the implementation of Agenda 21, to facilitate intergovernmental negotiations, to monitor conventions and efforts for sustainable development to transmit environmental alerts, and to transfer technical data. These organizations should also facilitate the linkage of different electronic networks and the use of appropriate standards and communication protocols for the transparent interchange of electronic communications. Where necessary, new technology should be developed and its use encouraged to permit participation of those not served at present by existing infrastructure and methods. Mechanisms should also be established to carry out the necessary transfer of information to and from non-electronic systems to ensure the involvement of those not able to participate in this way.

(e) Making use of commercial information sources

40.26. Countries and international organizations should consider undertaking surveys of information available in the private sector on sustainable development and of present dissemination arrangements to determine gaps and how those gaps could be filled by commercial or quasi-commercial activity, particularly activities in and/or involving developing countries where feasible. Whenever economic or other constraints on supplying and accessing information arise, particularly in developing countries, innovative schemes for subsidizing such information-related access or removing the non-economic constraints should be considered.

Means of implementation

(a) Financing and cost evaluation

40.27. The secretariat of the Conference has estimated the average total annual cost (1993-2000) of implementing the activities of this programme to be about $165 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes Governments decide upon for implementation.

(b) Institutional means

40.28. The institutional implications of this programme concern mostly the strengthening of already existing institutions, as well as the strengthening of cooperation with non-governmental organizations, and need to be consistent with the overall decisions on institutions made by the United Nations Conference on Environment and Development.

(c) Capacity-building

40.29. Developed countries and relevant international organizations should cooperate, in particular with developing countries, to expand their capacity to receive, store and retrieve, contribute, disseminate, use and provide appropriate public access to relevant environmental and developmental information, by providing technology and training to establish local information services and by supporting partnership and cooperative arrangements between countries and on the regional or subregional level.

(d) Scientific and technological means

40.30. Developed countries and relevant international organizations should support research and development in hardware, software and other aspects of information technology, in particular in developing countries, appropriate to their operations, national needs and environmental contexts.

Annex III

NON-LEGALLY BINDING AUTHORITATIVE STATEMENT OF PRINCIPLES FOR A GLOBAL CONSENSUS ON THE MANAGEMENT, CONSERVATION AND SUSTAINABLE DEVELOPMENT OF ALL TYPES OF FORESTS

PREAMBLE

(a) The subject of forests is related to the entire range of environmental and development issues and opportunities, including the right to socio-economic development on a sustainable basis.

(b) The guiding objective of these principles is to contribute to the management, conservation and sustainable development of forests and to provide for their multiple and complementary functions and uses.

(c) Forestry issues and opportunities should be examined in a holistic and balanced manner within the overall context of environment and development, taking into consideration the multiple functions and uses of forests, including traditional uses, and the likely economic and social stress when these uses are constrained or restricted, as well as the potential for development that sustainable forest management can offer.

(d) These principles reflect a first global consensus on forests. In committing themselves to the prompt implementation of these principles, countries also decide to keep them under assessment for their adequacy with regard to further international cooperation on forest issues.

(e) These principles should apply to all types of forests, both natural and planted, in all geographical regions and climatic zones, including austral, boreal, subtemperate, temperate, subtropical and tropical.

(f) All types of forests embody complex and unique ecological processes which are the basis for their present and potential capacity to provide resources to satisfy human needs as well as environmental values, and as such their sound management and conservation is of concern to the Governments of the countries to which they belong and are of value to local communities and to the environment as a whole.

(g) Forests are essential to economic development and the maintenance of all forms of life.

(h) Recognizing that the responsibility for forest management, conservation and sustainable development is in many States allocated among federal/national, state/provincial and local levels of government, each State, in accordance with its constitution and/or national legislation, should pursue these principles at the appropriate level of government.

PRINCIPLES/ELEMENTS

1. (a) States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies and have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

(b) The agreed full incremental cost of achieving benefits associated with forest conservation and sustainable development requires increased international cooperation and should be equitably shared by the international community.

2. (a) States have the sovereign and inalienable right to utilize, manage and develop their forests in accordance with their development needs and level of socio-economic development and on the basis of national policies consistent with sustainable development and legislation, including the conversion of such areas for other uses within the overall socio-economic development plan and based on rational land-use policies.

(b) Forest resources and forest lands should be sustainably managed to meet the social, economic, ecological, cultural and spiritual needs of present and future generations. These needs are for forest products and services, such as wood and wood products, water, food, fodder, medicine, fuel, shelter, employment, recreation, habitats for wildlife, landscape diversity, carbon sinks and reservoirs, and for other forest products. Appropriate measures should be taken to protect forests against harmful effects of pollution, including air-borne pollution, fires, pests and diseases, in order to maintain their full multiple value.

(c) The provision of timely, reliable and accurate information on forests and forest ecosystems is essential for public understanding and informed decision-making and should be ensured.

(d) Governments should promote and provide opportunities for the participation of interested parties, including local communities and indigenous people, industries, labour, non-governmental organizations and individuals, forest dwellers and women, in the development, implementation and planning of national forest policies.

3. (a) National policies and strategies should provide a framework for increased efforts, including the development and strengthening of institutions and programmes for the management, conservation and sustainable development of forests and forest lands.

(b) International institutional arrangements, building on those organizations and mechanisms already in existence, as appropriate, should facilitate international cooperation in the field of forests.

(c) All aspects of environmental protection and social and economic development as they relate to forests and forest lands should be integrated and comprehensive.

4. The vital role of all types of forests in maintaining the ecological processes and balance at the local, national, regional and global levels through, inter alia, their role in protecting fragile ecosystems, watersheds and freshwater resources and as rich storehouses of biodiversity and biological resources and sources of genetic material for biotechnology products, as well as photosynthesis, should be recognized.

5. (a) National forest policies should recognize and duly support the identity, culture and the rights of indigenous people, their communities and other communities and forest dwellers. Appropriate conditions should be promoted for these groups to enable them to have an economic stake in forest use, perform economic activities, and achieve and maintain cultural identity and social organization, as well as adequate levels of livelihood and well-being, through, inter alia, those land tenure arrangements which serve as incentives for the sustainable management of forests.

(b) The full participation of women in all aspects of the management, conservation and sustainable development of forests should be actively promoted.

6. (a) All types of forests play an important role in meeting energy requirements through the provision of a renewable source of bio-energy, particularly in developing countries, and the demands for fuelwood for household and industrial needs should be met through sustainable forest management, afforestation and reforestation. To this end, the potential contribution of plantations of both indigenous and introduced species for the provision of both fuel and industrial wood should be recognized.

(b) National policies and programmes should take into account the relationship, where it exists, between the conservation, management and sustainable development of forests and all aspects related to the production, consumption, recycling and/or final disposal of forest products.

(c) Decisions taken on the management, conservation and sustainable development of forest resources should benefit, to the extent practicable, from a comprehensive assessment of economic and non-economic values of forest goods and services and of the environmental costs and benefits. The development and improvement of methodologies for such evaluations should be promoted.

(d) The role of planted forests and permanent agricultural crops as sustainable and environmentally sound sources of renewable energy and industrial raw material should be recognized, enhanced and promoted. Their contribution to the maintenance of ecological processes, to offsetting pressure on primary/old-growth forest and to providing regional employment and development with the adequate involvement of local inhabitants should be recognized and enhanced.

(e) Natural forests also constitute a source of goods and services, and their conservation, sustainable management and use should be promoted.

7. (a) Efforts should be made to promote a supportive international economic climate conducive to sustained and environmentally sound development of forests in all countries, which include, inter alia, the promotion of sustainable patterns of production and consumption, the eradication of poverty and the promotion of food security.

(b) Specific financial resources should be provided to developing countries with significant forest areas which establish programmes for the conservation of forests including protected natural forest areas. These resources should be directed notably to economic sectors which would stimulate economic and social substitution activities.

8. (a) Efforts should be undertaken towards the greening of the world. All countries, notably developed countries, should take positive and transparent action towards reforestation, afforestation and forest conservation, as appropriate.

(b) Efforts to maintain and increase forest cover and forest productivity should be undertaken in ecologically, economically and socially sound ways through the rehabilitation, reforestation and re-establishment of trees and forests on unproductive, degraded and deforested lands, as well as through the management of existing forest resources.

(c) The implementation of national policies and programmes aimed at forest management, conservation and sustainable development, particularly in developing countries, should be supported by international financial and technical cooperation, including through the private sector, where appropriate.

(d) Sustainable forest management and use should be carried out in accordance with national development policies and priorities and on the basis of environmentally sound national guidelines. In the formulation of such guidelines, account should be taken, as appropriate and if applicable, of relevant internationally agreed methodologies and criteria.

(e) Forest management should be integrated with management of adjacent areas so as to maintain ecological balance and sustainable productivity.

(f) National policies and/or legislation aimed at management, conservation and sustainable development of forests should include the protection of ecologically viable representative or unique examples of forests, including primary/old-growth forests, cultural, spiritual, historical, religious and other unique and valued forests of national importance.

(g) Access to biological resources, including genetic material, shall be with due regard to the sovereign rights of the countries where the forests are located and to the sharing on mutually agreed terms of technology and profits from biotechnology products that are derived from these resources.

(h) National policies should ensure that environmental impact assessments should be carried out where actions are likely to have significant adverse impacts on important forest resources, and where such actions are subject to a decision of a competent national authority.

9. (a) The efforts of developing countries to strengthen the management, conservation and sustainable development of their forest resources should be supported by the international community, taking into account the importance of redressing external indebtedness, particularly where aggravated by the net transfer of resources to developed countries, as well as the problem of achieving at least the replacement value of forests through improved market access for forest products, especially processed products. In this respect, special attention should also be given to the countries undergoing the process of transition to market economies.

(b) The problems that hinder efforts to attain the conservation and sustainable use of forest resources and that stem from the lack of alternative options available to local communities, in particular the urban poor and poor rural populations who are economically and socially dependent on forests and forest resources, should be addressed by Governments and the international community.

(c) National policy formulation with respect to all types of forests should take account of the pressures and demands imposed on forest ecosystems and resources from influencing factors outside the forest sector, and intersectoral means of dealing with these pressures and demands should be sought.

10. New and additional financial resources should be provided to developing countries to enable them to sustainably manage, conserve and develop their forest resources, including through afforestation, reforestation and combating deforestation and forest and land degradation.

11. In order to enable, in particular, developing countries to enhance their endogenous capacity and to better manage, conserve and develop their forest resources, the access to and transfer of environmentally sound technologies and corresponding know-how on favourable terms, including on concessional and preferential terms, as mutually agreed, in accordance with the relevant provisions of Agenda 21, should be promoted, facilitated and financed, as appropriate.

12. (a) Scientific research, forest inventories and assessments carried out by national institutions which take into account, where relevant, biological, physical, social and economic variables, as well as technological development and its application in the field of sustainable forest management, conservation and development, should be strengthened through effective modalities, including international cooperation. In this context, attention should also be given to research and development of sustainably harvested non-wood products.

(b) National and, where appropriate, regional and international institutional capabilities in education, training, science, technology, economics, anthropology and social aspects of forests and forest management are essential to the conservation and sustainable development of forests and should be strengthened.

(c) International exchange of information on the results of forest and forest management research and development should be enhanced and broadened, as appropriate, making full use of education and training institutions, including those in the private sector.

(d) Appropriate indigenous capacity and local knowledge regarding the conservation and sustainable development of forests should, through institutional and financial support and in collaboration with the people in the local communities concerned, be recognized, respected, recorded, developed and, as appropriate, introduced in the implementation of programmes. Benefits arising from the utilization of indigenous knowledge should therefore be equitably shared with such people.

13. (a) Trade in forest products should be based on non-discriminatory and multilaterally agreed rules and procedures consistent with international trade law and practices. In this context, open and free international trade in forest products should be facilitated.

(b) Reduction or removal of tariff barriers and impediments to the provision of better market access and better prices for higher value-added forest products and their local processing should be encouraged to enable producer countries to better conserve and manage their renewable forest resources.

(c) Incorporation of environmental costs and benefits into market forces and mechanisms, in order to achieve forest conservation and sustainable development, should be encouraged both domestically and internationally.

(d) Forest conservation and sustainable development policies should be integrated with economic, trade and other relevant policies.

(e) Fiscal, trade, industrial, transportation and other policies and practices that may lead to forest degradation should be avoided. Adequate policies, aimed at management, conservation and sustainable development of forests, including, where appropriate, incentives, should be encouraged.

14. Unilateral measures, incompatible with international obligations or agreements, to restrict and/or ban international trade in timber or other forest products should be removed or avoided, in order to attain long-term sustainable forest management.

15. Pollutants, particularly air-borne pollutants, including those responsible for acidic deposition, that are harmful to the health of forest ecosystems at the local, national, regional and global levels should be controlled.

RESOLUTION 2

Expression of thanks to the people and Government of Brazil

The United Nations Conference on Environment and Development,

Having met in Rio de Janeiro at the invitation of the Government of Brazil from 3 to 14 June 1992,

1. Expresses its deep appreciation to His Excellency the President of Brazil, Mr. Fernando Collor, for his outstanding contribution as President of the United Nations Conference on Environment and Development to the successful outcome of the Conference;

2. Expresses its profound gratitude to the Government of Brazil for having made it possible for the Conference to be held in Rio de Janeiro and for the excellent facilities, staff and services so graciously placed at its disposal;

3. Requests the Government of Brazil to convey to the State and City of Rio de Janeiro and to the people of Brazil the gratitude of the Conference for the hospitality and warm welcome extended to the participants;

4. Acknowledges with appreciation the continuing commitment of the Government of Brazil to the objectives of the Conference and its decision to establish in Rio de Janeiro an International Centre for Sustainable Development.

RESOLUTION 3

Credentials of representatives to the Conference

The United Nations Conference on Environment and Development

Approves the report of the Credentials Committee. 1/

1/ A/CONF.151/17.

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Litho in United Nations, New York
92-83655–January 1993–2,725

ISBN 92-1-100498-5
Set: not to be sold separately

United Nations publication
Sales No. E.93.I.8 (Vol.I)